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Feline Leukemia Testing: One and Done for Everyone

american pets alive!

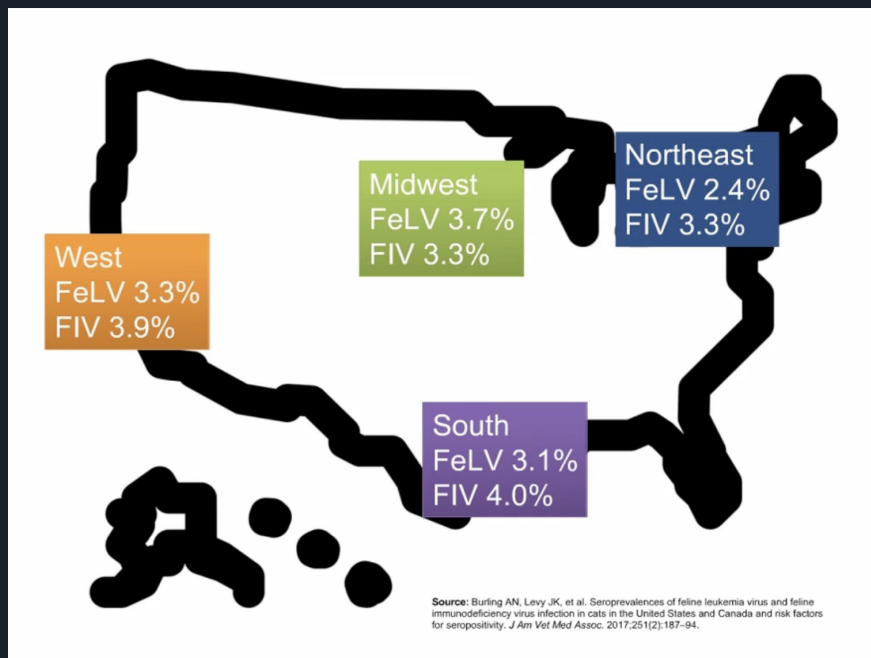


**MILLION CAT
CHALLENGE**



**Maddie's
Fund**

Fast FeLV facts: 2021 update



- 2-4% prevalence in the US
- It's not possible to determine a cat's infection status based on testing at a single point in time.
 - FeLV infection may ebb and flow over the cat's lifetime.
- FeLV+ cats can be safely housed, sheltered, and adopted with great success.
 - FeLV adoption programs are increasingly common and are now the norm.
- We still don't know how long they live on average, but it's longer than "2 years."
 - We're working on it...
- Lots of shelters are no longer testing at all, and that's okay.
- There is no reason cats testing positive should ever be euthanized based solely on a blue dot!

Retrovirus management guidelines have changed!

Important Takeaways:

- FIV and FeLV testing is optional in shelters
 - Recommended for co-housed cats and as a diagnostic; consider if standard testing at intake is required for *all*.
- Outcomes classified as **abortive, regressive, or progressive**.
 - Discordant cats may move between stages.
- Because testing is confusing, expensive, and each cat and situation is unique, the new recommendation for shelters is a simple one-and-done approach.

Outcomes of FeLV infection have been redefined and are now classified as abortive infection, regressive infection and progressive infection.



catvets.com



The stages of FeLV

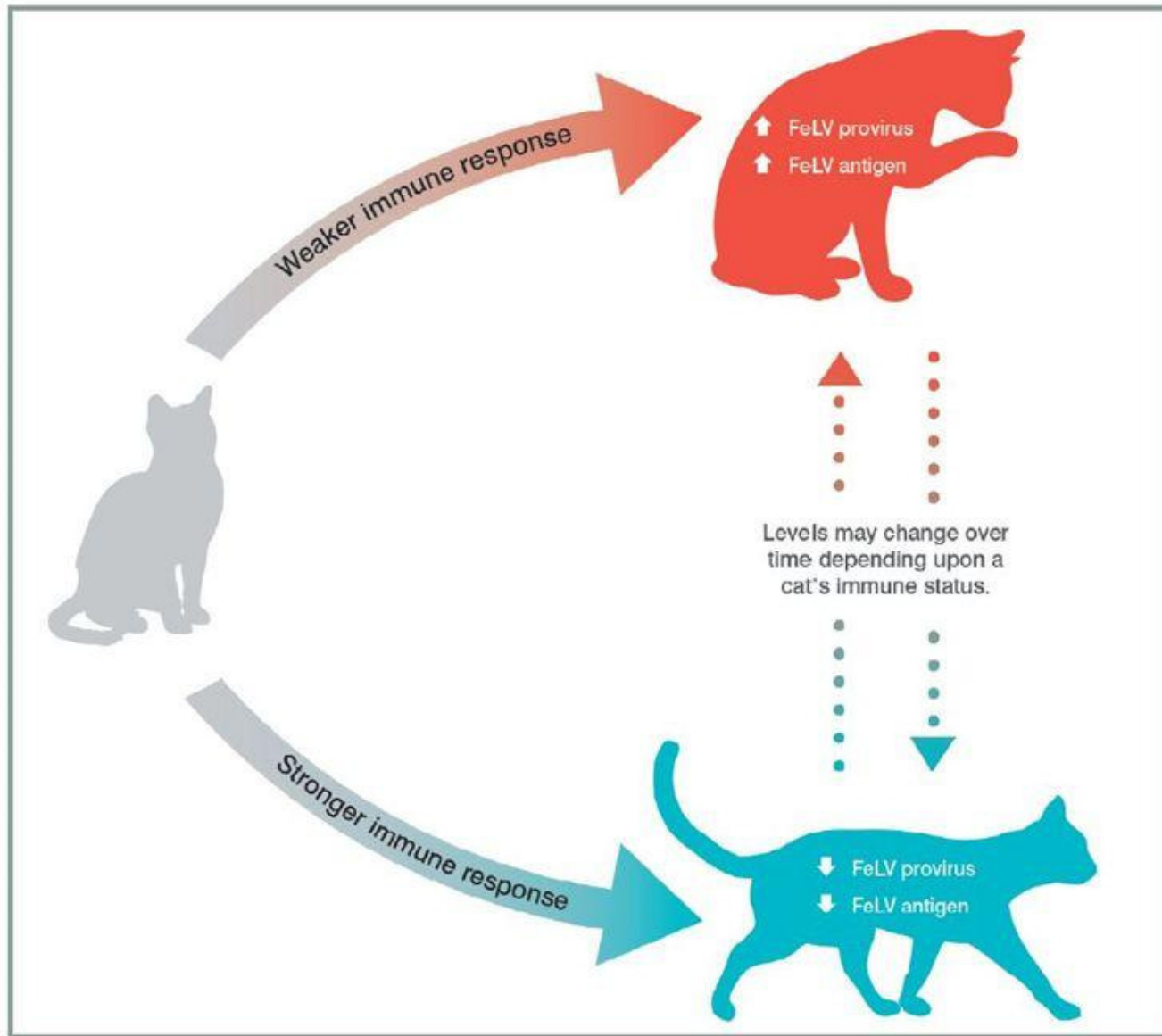
Abortive: An abortive infection occurs when the cat's immune system eliminates the virus prior to proviral DNA integration in dividing lymphocytes. Cats with abortive infections do not shed infectious virus and do not develop clinical signs.

Regressive: A cat with a regressive infection has controlled the spread of infection prior to a secondary viremia. These cats are at *reduced* risk of shedding the virus and developing FeLV-related disease.

Although these cats may not have (or may eventually clear) viremia, FeLV provirus is integrated into the cat's genome, resulting in lifelong infection, FeLV proviral DNA can be detected in the blood by PCR. No antigen or culturable virus is present in the blood and the virus is not shed in saliva after these cats have undergone the initial infection phase and their immune system has suppressed the virus. Therefore, these cats are not infectious to other cats except via blood transfusion or if reactivation occurs.

Progressive: A cat with a progressive infection has undergone infection of the bone marrow and a secondary viremia and is at increased risk of shedding the virus and developing FeLV-related disease. Progressively infected cats have shorter survival times and commonly succumb to FeLV-associated diseases.

FeLV life cycle



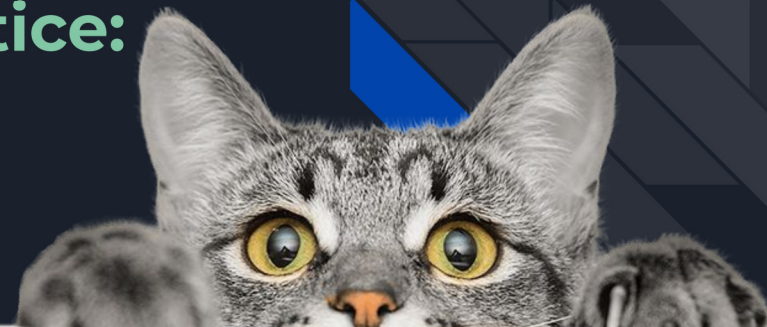
Who should we test for FeLV?

Test at the shelter:

- Co-housed cats and kittens
- As a diagnostic, certain sick/injured cats and kittens
- Everyone, if it makes sense for your organization and community.
- Transfer cats, if your rescue partners require it.

Test as a cat owner, via private practice:

- Everyone



Why shelters may not test everyone

- It's expensive and the US FeLV prevalence is <4%.
- Any test is a snapshot of today, not yesterday, not necessarily tomorrow.
- FeLV transmission is easily controlled through simple measures and routine cleaning.
- Retroviruses are lifelong conditions better suited for management in private practice with an ongoing client relationship.



What has **not** changed in the guidelines?

- It remains safe to house, care for, and adopt FeLV+ cats.
- Transmission is easily controlled with common-sense precautions.
- The FeLV vaccine remains effective but is still not recommended as a core shelter vaccine.
- TNR/RTH cats should not be routinely tested.
- The IDEXX ELISA (SNAP) remains the recommended POC test.
 - APA! specifically recommends you do *not* use other brands.

The presence of infection can vary within individual litters, community cat colonies and households.

It is not appropriate to conserve costs by testing one cat as a proxy for others.



Hospitalized retrovirus-infected cats can be kept in the general hospital wards, but should not be allowed to have direct contact with other hospitalized cats.



There is little risk of retrovirus transmission among cats by indirect exposure when simple precautions and routine cleaning procedures are followed.

The new **APA!** testing guidelines

All cats 6-weeks of age or older:

1. Test at intake using whole blood and an IDEXX ELISA SNAP test.
 - a. If positive, consider cat positive. No further testing.
 - b. If negative, consider cat negative. No further testing.

Nursing or pregnant queens:

1. Test at intake using whole blood and an IDEXX ELISA SNAP test. Test all cats and kittens individually.
 - a. If positive, consider cat positive. No further testing.
 - b. If negative, consider cat negative. No further testing.
 - c. If results vary amongst the litter, separate positives from negatives.

If negative but there has been known significant exposure:

1. Test at intake using whole blood and an IDEXX ELISA SNAP test.
2. Retest 30 days later using the above procedure.



*Note: APA! no longer tests for FIV at all.

Policies and Procedures

Testing Protocols for FeLV Positive Cats

Update to policy 8/30/21: APA! Is embracing the recommended one-and-done testing policy for all FeLV cats. All tests will be done using whole blood on IDEXX ELISA tests; all serum testing has been discontinued. Standard retests after 30 days have been discontinued.

Cats 6 weeks and older

- Retest ALL reported positive cats on intake.
- Use whole blood, an IDEXX ELISA test, and ensure the test instructions are adhered to properly.
- If cat is positive, even faint positive, cat is considered positive. No further testing will be performed.
- If cat is negative, regardless of test result cited from sending shelter, cat is considered negative. No further testing will be performed. An incongruent previous test result cited from the sending shelter is to be discounted. The APA! Administered test is the test of record.
- Cats who are negative but have been with positive cats for any significant length of time (siblings, kennelmates, etc; longer than 24 hours) should be considered exposed, kept separate from other cats for 30 days, and tested individually again on whole blood. If negative at retest, consider cat negative. If positive on retest, consider cat positive.
- All cats and kittens with littermates must have individual samples drawn. In neonates, up to 3 test samples can be pooled to run one test.

Nursing or Pregnant Moms

- Mothers and kittens must be tested individually. Do not rely on the diagnostic test result of a mother cat to determine the FeLV status of her kittens.
- If a mother tests positive but any kittens test negative, the negative kittens should be separated from the mother.

Bottle Baby Kitten (Neonatal)

- If kittens have a positive test from sending shelter, kittens should be tested individually using whole blood.
 - Kittens should be separated based on negative or positive status.
 - Kittens who are negative but have been with positive cats (siblings, queen, etc.) should be considered exposed, kept separate from other cats for 30 days, and tested individually on whole blood again at that time. If negative at retest, consider kitten negative. If positive on retest, consider kitten positive.

Simplified. No more serum. No “confirmation.”



*Caveat: Pooling blood is NOT recommended by the AAFP nor Dr. Levy.

APA! pools blood in neonates (only) as a cost-saving measure due to our volume of neonates. If that pool-test is positive, kittens will then be tested individually.

Download at americanpetsalive.org/resources

But WHY?!

Ongoing research has definitely shown:

- Whole blood is the most sensitive and accurate testing media.
- IDEXX has the highest sensitivity and specificity of any POC test.

Serum testing may weed out **regressive** infection, but for shelter purposes, we now consider regressive cats positive, so no need for further testing.

- Regressive cats are at a reduced risk of shedding, but not **NO** risk.
- Regressive cats **can** be reactivated and viremia **can** reoccur.
 - The risk for reactivation of viremia decreases with time; however, integrated provirus maintains its replication capacity, and reactivation is possible years (possibly lifelong) after initial exposure to FeLV.
 - Thus, it's safest to consider regressive cats positive.



Managing the regressive cat in practice

Even if the cat is regressive, versus progressive, house with FeLV+ cats.

- The regressive cat cannot get **more** FeLV from living with progressive cats.
- If cat ends up abortive, versus regressive, cat likely has an adequate immune response to remain FeLV-free.
- Adopt cat out as a FeLV+ cat.
 - Adopt to indoor-only homes as a single cat, or with other FeLV+ cats.



The hullabaloo about “confirmation” testing

Fact: Often times, there is no such thing.

- Repeated tests often indicate discordant results anyway, with up to 25% of cats having discordant results.
- Any test is a snapshot of today, not tomorrow. FeLV infection and stages may change with time and circumstance.
- IFA tests are no longer recommended.
- The only way to determine the stage of FeLV infection is a **Quantitative PCR test**:
 - Best suited for private practice due to cost and ongoing management of retroviruses in unique situations
 - Or, reserved for unique cases where extra investigation is warranted.



What is the IDEXX Quantitative RealPCR Test?

idexx.com/files/updates-diagnosis-management-felv.pdf

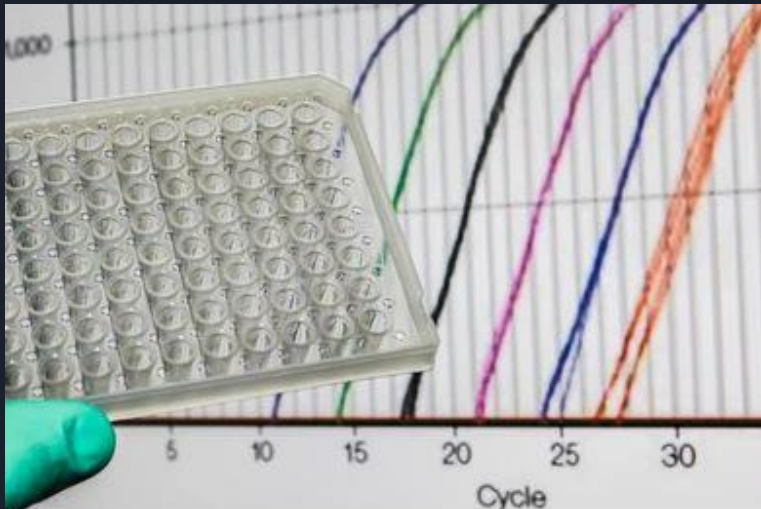
Quantitative Polymerase Chain Reaction:

A test that amplifies and measures the amount of FeLV DNA.

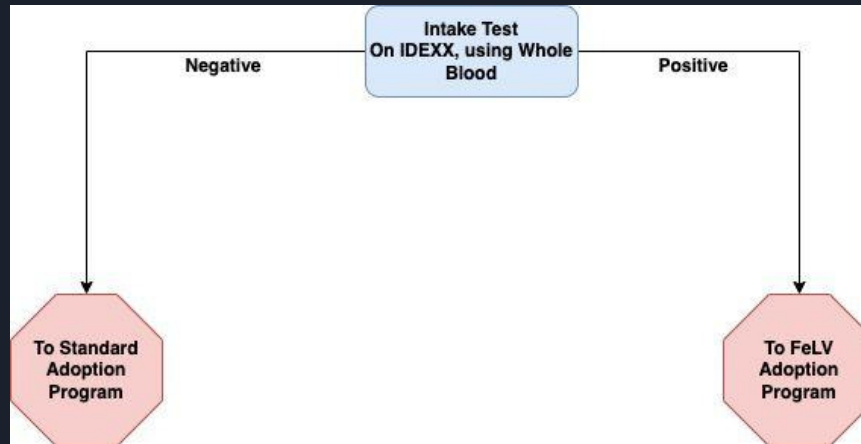
- This test can help assess the **current** stage of FeLV.
- A low DNA proviral copy number (<1 million/mL) is associated with prolonged average survival.
- A high DNA proviral copy number (≥ 1 million/mL) is associated with decreased average survival.
- Can miss very low levels of FeLV if not in circulation.

Practicalities:

- You must send this out.
- Cost (\$60-\$100 for PCR/antigen package)
- As always, results may change!
- For these reasons, best suited for lifelong management in private practice, or special situations in shelter medicine.
- Remember, the **stage** of infection does not change our management of the virus in the shelter. Positive is still positive.



Break it down: Testing simplified



Exceptions in the shelter:

- Known significant exposure but negative on intake test: retest in 30 days.
- Highly unusual medical cases, as reviewed by DVM.

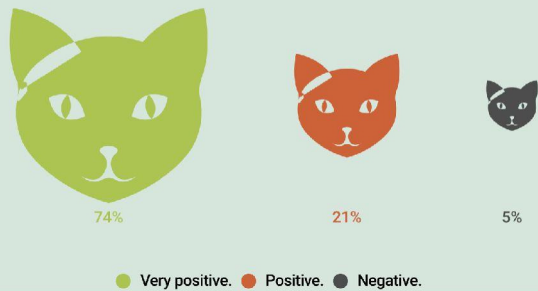
When to order a quantitative PCR:

- The cat owner and private DVM want to assess stage of infection for better management.
- This cat is really weird, we can't figure it out, and it's making us crazy.
 - But be forewarned, you may never get the definitive answer you seek. Because cats.

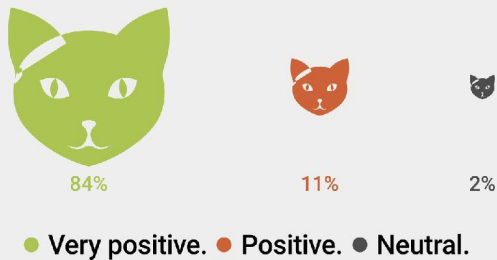
Got it. Now, what can you tell me about outcomes?

ADOPT THEM!

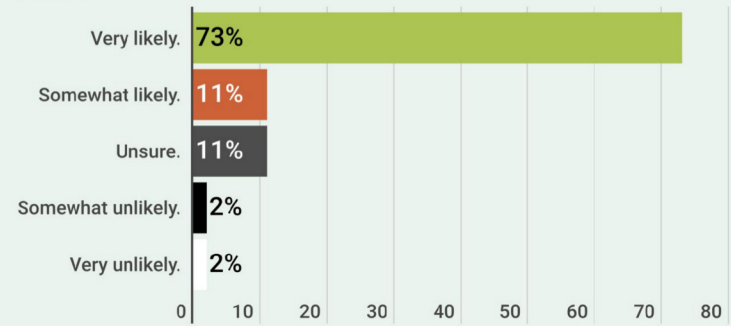
Overall how would you rate your experience living with this cat?



Overall the impact of your adoption on your life has been:



How likely would you be to adopt a FeLV cat again, if you were in the same situation but knowing what you know now about FeLV?



Versus FeLV-negative (control) cats, adopters of FeLV+ cats:

- Have higher rates of attachment to their cat
- Have higher satisfaction with the adoption process
- Are happier with their cat on a daily basis

<https://chewonthis.maddiesfund.org/2019/04/study-95-of-adopters-with-felv-cats-have-a-positive-experience/>

Filter By Need:

FELV +



FelVies, as we call them, are cats who have tested positive for the feline leukemia virus. The virus causes a weakened immune system and while these cats may have a shorter lifespan, they have the same quality of life and are purrfectly adoptable! Adoption fees are always waived for FelV+ cats and APA! provides complimentary medical care for conditions related to the virus.

**Cloudy
Rainbow**

APA-A-86911

2 YEARS
8 MONTHS

FEMALE

DOMESTIC
SHORTHAIR

FOSTER

[Learn More](#)**Merlin
Muffin**

APA-A-87815

2 YEARS
10 MONTHS

MALE

DOMESTIC
SHORTHAIR

FOSTER

[Learn More](#)**Medusa**

APA-A-50365

4 YEARS
1 MONTHS

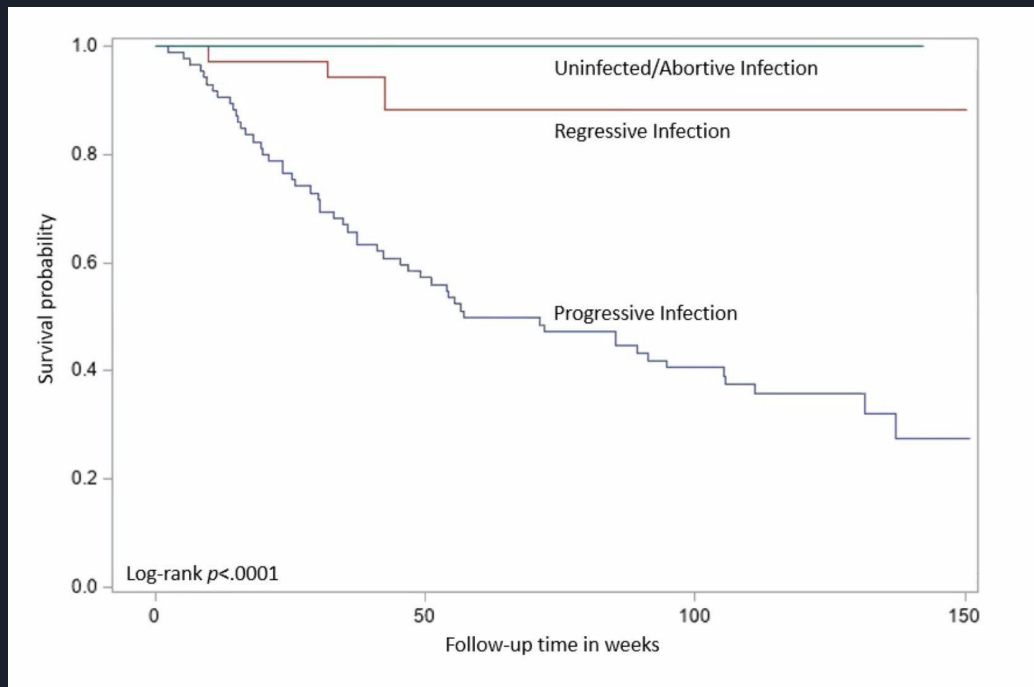
FEMALE

DOMESTIC
SHORTHAIR

FOSTER

[Learn More](#)

Got it. Now, what can you tell me about outcomes?



- Regressive cats are doing very well.
- There is still no recommended medication, anti-viral, or voodoo for a cure.
 - Anecdotally, reducing stress remains the most important management system for keeping FeLV+ cats healthy.
 - Studies show longer survival in homelike environment with few other cats compared to shelter/sanctuary
- Many have successfully undergone FIP treatment!
- We still do not recommend deliberately housing, nor adopting out, positive cats with negative cats.

Got it. Now, what can you tell me about outcomes?

If you don't have an adoption program yet, start one.



FelV adoption programs are now the *norm*. If you are still euthanizing based on a blue dot, you're outdated.

Huge donor, volunteer, and public support for these programs.

New **APA!** Incoming Transfer Protocol

- We want a positive *IDEXX* test result, no other brands.
- We no longer require a serum test result.
- There is a significant wait-list
- We will help you start your own FelV program!
 - US FelVies for Adoption Facebook Page
 - Updated AmPA FelV Toolkit, featuring adoption tips and tricks, marketing advice, etc
- APA! FelV Team always happy to answer your questions and help you adopt these cats out yourself. (felv@austinpetsalive.org)
 - I promise, **YOU CAN DO IT.**

Download ALL THE THINGS at americanpetsalive.org/resources

Thank you to Maddie's
Fund and Million Cat
Challenge!



Questions? Ask at maddies.fund/FelineLeukemiaTesting