

FALPS (FELINE AUTO-IMMUNE LYMPHOPROLIFERATIVE SYNDROME) IN BRITISH SHORTHAIR CATS & OUTCROSSED BREEDS (MANX, SCOTTISH FOLD & SELKIRK REX)

WHAT IS FALPS?

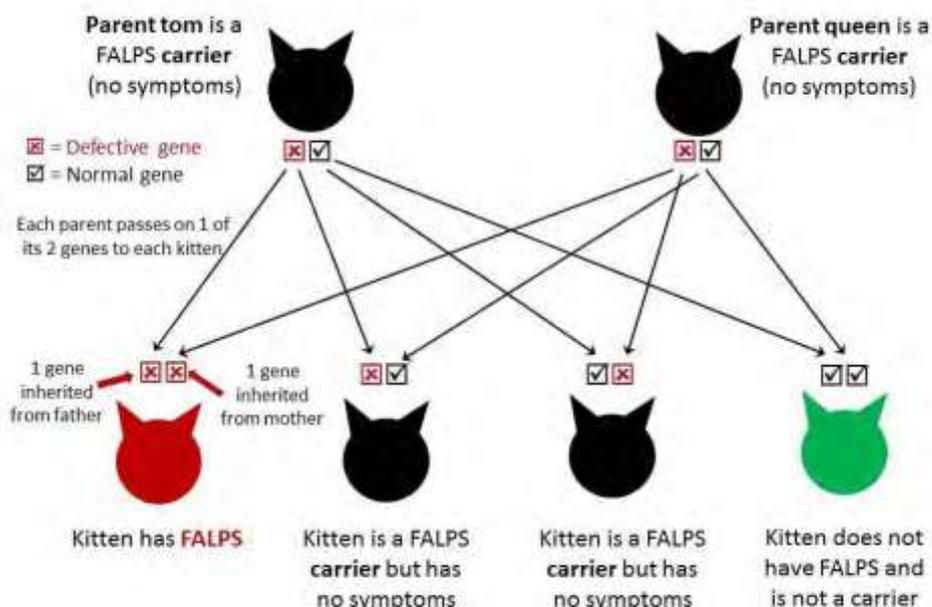
Feline ALPS (FALPS) is an unusual disease first seen in multiple related British shorthair (BSH) kittens in Australia in the 1990s and in New Zealand from 2008.¹ Kittens affected by FALPS are normal at birth but start to show signs of tiredness, reduced growth, anaemia and large lymph nodes (important in the immune system) in the first 2-3 months of life. The disease usually progresses quickly, currently has no effective treatment, and affected kittens often die or require euthanasia shortly after diagnosis. The disease is sometimes misdiagnosed as an unusual form of lymphoma (a type of cancer).

WHAT CAUSES FALPS?

We have recently confirmed that FALPS is an inherited disease due to a defect in one of the genes controlling the proliferation of lymphocytes (a type of white blood cell).² Disease inheritance is recessive – which means that a kitten must inherit 2 copies of the defective gene (1 from each parent) to develop FALPS. Kittens inheriting only 1 copy of the defective gene appear healthy and do not develop FALPS – but will be carriers of FALPS and so can pass the defective gene on to their kittens.

HOW CAN 2 HEALTHY CATS PRODUCE FALPS-AFFECTED KITTENS?

Cats which are carriers of the defective FALPS gene appear healthy, so owners or breeders don't usually know they are carriers. However, when 2 carrier cats mate together, that mating is likely to produce some kittens which develop FALPS as well as some kittens which are carriers. For example, in a mating between 2 carrier cats (see diagram below), 25% of kittens would be expected to develop FALPS, 50% of kittens would be expected to be FALPS carriers (but would themselves appear healthy), and 25% of kittens would be expected to be healthy non-carriers of the disease - although the exact numbers seen in each litter will vary. So, any mating between 2 FALPS carrier cats has a risk of producing both sick (FALPS-affected) and carrier kittens.



Carriers have 1 defective gene and 1 normal gene = ☒☑ A kitten needs 2 defective genes to develop FALPS = ☒☒

HOW CAN I FIND OUT IF MY CAT OR KITTEN IS A FALPS CARRIER?

Any cat which has been the parent of a FALPS-affected kitten should be assumed to be a FALPS carrier. However, a cat that has not previously produced FALPS-affected kittens is not necessarily a non-carrier. The best way to reliably identify whether cat is a FALPS carrier is have the cat genetically tested – which we can do at Massey University in New Zealand using DNA from cheek swab samples. Owners and breeders can easily collect and send these samples themselves. The current cost of testing is \$50 + GST per sample.

Please contact us if you think you have had had kittens with FALPS, would like to discuss FALPS testing or be sent a testing kit, or would like more information about the disease:
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WHAT SHOULD I DO IF MY CAT IS A FALPS CARRIER?

Cats identified as FALPS carriers should be de-sexed and not used for breeding.

Alternatively, if desexing all carrier cats is not immediately feasible (e.g. in a cattery with a small number of breeding cats), carriers should only be mated to known (i.e. tested) non-carriers, and all kittens from the mating should be tested for FALPS. Kittens tested as non-carriers should then be used for future matings in preference to carriers, which should be de-sexed.

As carriers do not seem to be affected by the disease themselves, they are fine as pets provided they are de-sexed.

REFERENCES

1. Aberdein, D.; Munday, J. S.; Fairley, R. A.; Vernau, W.; Thompson, K. G., A Novel and Likely Inherited Lymphoproliferative Disease in British Shorthair Kittens. *Vet Pathol* **2015**, *52* (6), 1176-82.
2. Aberdein, D.; Munday, J. S.; Gandolfi, B.; Dittmer, K. E.; Malik, R.; Garrick, D. J.; Lyons, L. A.; Lives, C., A FAS- ligand variant associated with autoimmune lymphoproliferative syndrome in cats. *Mamm Genome* **2016**.

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If anyone would like a copy of Dr Dani Aberdein's thesis please email Robbie Walker robbie.walker@internode.on.net, the document is 5mb in size and is too large to be uploaded to the ACF website.