lifestyle, environment and overall health status. The 2013 AAFP vaccination guidelines recommend revaccination every 2 years for cats at low risk of infection and annually for cats at higher risk, based on lifestyle, environment and overall health status. Since those vaccination guidelines were issued, FeLV vaccines with extended duration of immunity have become available. Where vaccines with a 3-year duration of immunity are available, their use can be considered. The 2013 AAFP Feline Vaccination Advisory Panel recommends administering subcutaneous FeLV vaccines in the left hindlimb distal to the stifle joint. The AAFP-recommended FeLV vaccination protocol is outlined in the box below.

**Feline immunodeficiency virus vaccination**

Multiple studies have shown that cats infected with FIV have low levels of morbidity and mortality with appropriate husbandry and disease management. At the time of writing, only one FIV vaccine is commercially available (Fel-O-Vax FIV; Boehringer Ingelheim) and it is not available in Canada or the USA. Nevertheless, all veterinarians should be aware of this vaccine, because previously vaccinated cats are still present in Canada and the USA, and cats can relocate from other countries where the vaccine is available, such as Australia, New Zealand and Japan. Fel-O-Vax FIV is a whole-virus, dual subtype (clades A and D), inactivated vaccine combined with an adjuvant, and is licensed for the vaccination of healthy cats 8 weeks of age or older. Variability in vaccine efficacy has been noted. One Australian study (the only field study published to date) found the vaccine had a protective rate of 56%.

A study using an FIV isolate in the UK found the vaccine failed to protect experimentally challenged cats. A study of client-owned FIV-vaccinated cats in Australia found a lack of broadly neutralizing antibodies, suggesting cats might not be protected against some virulent recombinant strains in that country.

FIV vaccination is classified as ‘non-core’ according to the 2013 AAFP Feline Vaccination Advisory Panel and is recommended for cats at high risk of exposure, such as cats with outdoor access or those living with FIV-infected cats. The 2013 AAFP vaccination guidelines recommend owners be informed of the difficulties in interpreting some FIV test results in vaccinated cats and the low protective rate of the vaccine. In addition, the AAFP recommends that all cats, including FIV-vaccinated cats, should carry both visual and permanent identification, such as a microchip and collar (see AAFP’s 2019 ‘Microchip Identification of Cats’ position statement; catvets.com/guidelines/position-statements/microchip-identification-cats-position-statement).

It cannot be concluded that FeLV vaccination protects against all outcomes of FeLV infection. Nevertheless, several current vaccines are still of great clinical importance because they appear to be efficacious at preventing progressive infection and, thus, curtailing FeLV-associated diseases.

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**AAFP Feline Vaccination Advisory Panel recommendations for feline leukemia virus vaccination**

**Initial vaccination protocol for kittens and unvaccinated adult cats**
- Administer FeLV vaccine series to all cats at risk of infection and all kittens up to and including 1 year of age
- Test all cats for retrovirus infection (regardless of age) before vaccination
- Give first vaccination as early as 8 weeks old
- Administer two vaccines, 3–4 weeks apart
- Administer FeLV booster vaccination 1 year after initial vaccine series

**Revaccination protocol for cats 2 years of age and older**
- **Do not revaccinate** cats with no risk of exposure, such as:
  - Cats living in a single-cat household with no exposure to other cats
  - Cats living in a household with other cats known to be FeLV negative
  - Cats with outdoor access to an enclosure only or no outdoor access
  - Cats with no exposure to either FeLV-infected cats or cats of unknown FeLV status
- **Revaccinate annually** cats with high risk of exposure, such as:
  - Cats with outdoor access
  - Cats living with known FeLV-infected cats
  - Cats in contact with cats of unknown FeLV status
- **Revaccinate every 2 years** cats with low risk of exposure, such as:
  - Cats with no history of inter-cat aggression (eg, previous cat fight bites)
  - Cats with limited outdoor access and low possibility of exposure to cats of unknown FeLV status