

# DISEASE INFORMATION FACT SHEET

## Feline herpesvirus 1



This Disease Information Fact Sheet accompanies the 2013 AAFF Feline Vaccination Advisory Panel Report published in the *Journal of Feline Medicine and Surgery* (2013), Volume 15, pp 785–808.

### Disease facts

Feline herpesvirus 1 (FHV-1; feline rhinotracheitis virus) induces relatively severe upper respiratory tract disease (URD) with marked rhinitis, sneezing and conjunctivitis, which in some cases may lead to chronic signs.<sup>1,2</sup> Less common manifestations include oral ulceration and primary pneumonia, and generalized disease may occasionally occur particularly in young or immunosuppressed animals. The role of FHV-1 in various forms of ocular disease and skin lesions is increasingly being recognized.<sup>1,3–8</sup>

Initial infection is followed by viral latency, primarily in the trigeminal ganglia, with periodic viral reactivation particularly after stress; reactivated carriers may show clinical signs.<sup>1,2,9</sup> Transmission is largely by direct contact with infected ocular, nasal or oral secretions, but may also occur through environmental contamination. However, the virus is relatively labile, remaining infectious for less than 24 h. Aerosols are not of major importance in the spread of this virus.

Disease tends to be seen in young kittens, particularly in breeding colonies with endemic disease, following the decline of maternally derived antibodies (MDA); this generally occurs by 9 weeks of age, but may be earlier.<sup>2,10</sup> Disease is also common in groups of cats, such as in boarding and shelter facilities, where stress may lead to virus reactivation and spread by carrier cats; and high dose exposure may lead to shorter incubation periods and more severe clinical signs.<sup>2,11,12</sup>

The 2013 Report of the Feline Vaccination Advisory Panel of the American Association of Feline Practitioners (AAFP) provides practical recommendations to help clinicians select appropriate vaccination schedules for their feline patients based on risk assessment. The recommendations rely on published data as much as possible, as well as consensus of a multidisciplinary panel of experts in immunology, infectious disease, internal medicine and clinical practice. The Report is endorsed by the International Society of Feline Medicine (ISFM).

### Vaccine types

Only one serotype of FHV-1 occurs and all isolates are very similar genetically, thus all vaccine strains are likely to be equally effective. All FHV-1 vaccines are presented in combination with feline calicivirus (FCV) vaccines; other antigens may be included. Modified-live (ML) injectable FHV-1 vaccines are the most common preparations, but inactivated adjuvanted injectable products are also marketed. ML vaccines for intranasal administration are also available in some countries. Both ML and inactivated virus vaccines give reasonable protection against disease in the majority of animals but mild clinical signs may be seen in some. Vaccines do not prevent infection or viral latency,<sup>1</sup> although shedding post-challenge may be slightly reduced.<sup>13,14</sup>



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## Onset and duration of immunity

In general, onset of protection is considered to be from 1–3 weeks after the second vaccination, and manufacturers recommend revaccination after 1 year.<sup>13</sup> Published serologic and challenge studies indicate, however, that vaccination provides moderate protection in the majority of animals for up to 3 years or longer post-vaccination.<sup>15–18</sup> Nevertheless, protection is not always complete shortly after vaccination and declines as the vaccination interval increases.<sup>2,17,19–21</sup>

### Advisory Panel Recommendations

Vaccination against FHV-1 is considered core. In the majority of kittens, MDA are undetectable by 9 weeks of age,<sup>1,2</sup> but there is considerable variation between individuals. In some they may decline earlier, while in others MDA may still be interfering at 12–14 weeks of age and thus are likely to last longer in some animals.<sup>10,27,28</sup> Because of this variability, the initial series of vaccinations ideally should begin at 6 weeks of age and be repeated every 3–4 weeks (or 2–3 weeks in shelters) until 16–20 weeks of age. In some countries vaccines are only licensed for use from 8–9 weeks of age, although studies have shown that injectable vaccines may be effective after 5–6 weeks.<sup>10,29</sup>

Vaccination as early as 4 weeks may be appropriate in situations of high risk (eg, shelters or catteries with endemic disease) or

questionable MDA status (eg, orphaned kittens or those born to queens with unknown vaccination histories). Revaccination should take place at 1 year of age after kitten vaccination, or 1 year after the primary course in older cats. Thereafter, cats should be vaccinated once every 3 years. If a cat is going to be placed in a known high-risk situation, an additional booster vaccination may be warranted 7–10 days prior to entry, particularly if it has not been vaccinated in the preceding year.

A single dose of intranasal vaccine offers rapid onset of protection (2–6 days), and can be useful for animals entering a high-risk situation such as a boarding facility or shelter.<sup>1,9,26</sup> (See also sections in the Report on boarding catteries and shelters, pages 791–794, for information on the use of intranasal vaccines in these contexts.)

## Vaccine safety

ML injectable FHV-1 vaccines, combined with FCV antigens, are generally safe, although mild clinical signs may occasionally occur after their use.<sup>22</sup> In some cases, this may result from accidental oronasal exposure to vaccine virus (eg, a cat licking the injection site, or being exposed to aerosolized vaccine while air is expelled from the syringe).<sup>23–25</sup> However, such cats may be undergoing coincidental infection with field virus. URD signs are more commonly seen (in one study, 30% cats)<sup>26</sup> following intranasal vaccination. Inactivated vaccines may be more appropriate in disease-free colonies as there is no risk of spread or reversion to virulence.

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#### DISEASE INFORMATION FACT SHEETS

- ❖ Feline herpesvirus 1
- ❖ Feline calicivirus
- ❖ Feline panleukopenia
- ❖ Rabies
- ❖ Feline leukemia virus
- ❖ Feline immunodeficiency virus
- ❖ Feline infectious peritonitis
- ❖ *Chlamydomphila felis*
- ❖ *Bordetella bronchiseptica*

#### GENERAL INFORMATION FACT SHEET

- ❖ The immune response to vaccination: a brief review

#### SUPPLEMENTARY FILES

Fact Sheets accompanying the 2013 AAEP Feline Vaccination Advisory Panel Report are available, together with the Pet Owner Guide included in Appendix 2, at <http://jfms.com>  
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PET OWNER GUIDE  
(APPENDIX 2, pp 807–808)  
❖ Vaccinations for Your Cat