

Recommended testing for imported dogs

Based on advice from ESCAAP and Ian Wright MRCVS. Updated Feb 2022 by J Allsop MRCVS Clinical Lead in Small Animal Practice and Emi Barker Clinical Lead in Infectious Diseases and Clinical Pathology.

Background

Infectious diseases are everywhere – some are ubiquitous (i.e. endemic), others are more prevalent in other areas of the world or can only be spread by species of blood-sucking arthropods (i.e. fleas, ticks, flies) that we do not have in the UK. When compared to dogs that transiently visit the continent on holiday, imported or immigrating dogs have typically spent more time abroad and consequently have increased risk of exposure to infected dogs and the arthropods that transmit disease. However, any dog with a history of travel is at risk of carrying a 'nonendemic' infectious disease – one they are unlikely to be exposed to in the UK. Infrequently, some of the nonendemic infectious diseases discussed below are also found in non-travelled dogs – usually following prolonged exposure to travelled dogs.

The following guidance is for dogs that have been imported from continental Europe. The UK is a large importer of dogs for the pet market (60,000 dogs in 2020), and continental Europe is our closest land mass from which most of these dogs are sourced! For travel from elsewhere in the world, infectious disease prevalence maps can provide information as to which infectious diseases can be found in the country(s) of origin or transit (<https://cvbd.elanco.com/cvbd-maps>). For owners, your primary care vet should be the first point of contact regarding any queries. For vets, if you have any additional concerns these can be addressed to an infectious disease specialist.

Why and when to test

Many infectious diseases can be silent, for a period at least, only becoming apparent months to years after travel, while some dogs will never show clinical signs. Knowing that these infections are present can allow early, and potentially more successful, treatment and avoid unexpected expenses in the future.

Ideally dogs should be screened *before* travel as, in a perfect world, dogs with some of these infections should not be imported due to human health risk. Where other infections are found, potential new owners should be made aware of the risk of on-going costs, risk of transmission to their other dogs, and even risk to their own health were they to import a dog with an existing infectious disease, known or otherwise. Most rescue shelters and breeders that import dogs are trying their best, albeit often with limited funds – but as there is no legal requirement to test dogs prior to travel this can be an area that some save money on. Some owners or rescue shelters intentionally import dogs with known infectious disease, often leishmaniosis and while their sentiment is admirable sometimes other infections are missed and their *forever home* may be unaware of the potential for future complications and heartbreak.

In most cases dogs should be tested as soon as possible following import. This means that, were an infection present, it can be identified and treated before the dog develops clinical signs or transmits disease to their new family. However, many of the screening tests exposure and it can take an extended period following infection to develop the antibody response required to give a positive result. For other infections, only certain stages of the disease process are detectable. This can result in an extended period of time following initial exposure to a positive result:

- *Brucella canis* – It is suspected that an antibody response should be detectable within 3 months of exposure, likely sooner



Recommended testing for imported dogs

- *Leishmania infantum* – Only around half of dogs have detectable antibodies 5 months after exposure, with some taking up to 2 years.

- *Heartworm (Dirofilaria immitis)* – it takes 6-7 months for adult worms to appear in the blood vessels around the heart following the bite of an infected mosquito. Routine screening tests either detect the adult worms, or their circulating offspring.

Ultimately, this means that follow-up testing is often recommended – dependent upon risk factors such as age, country of origin, other test results, time since travel, and clinical signs (if any) present. Imported or travelled dogs that spend additional periods of time abroad may be exposed during these subsequent events – such that repeat testing would be offered following every episode of travel.

Common or concerning infectious diseases

All of the following infectious agents have been detected in imported dogs, most will have no clinical evidence of infection and can still transmit to other dogs and, in some cases, people.

Infectious agent	Zoonotic risk	Transmission risk
<i>Brucella canis</i> 'brucellosis' (human health concern)	Yes - although risk is considered low in most cases, infections in humans of great concern	Yes - close contacts (this is a canine STD!)
<i>Leishmania infantum</i> 'leishmaniosis' (really common)	Technically yes - but not reported in areas without the sandfly, which includes the UK	Yes - Close contacts, including without the sandfly (Unknown transmission mechanism)
<i>Ehrlichia canis</i> 'ehrlichiosis' (really common)	No	Yes - via ticks, so can occur without direct contact
<i>Dirofilaria immitis</i> 'Heartworm' (common)	No	No
<i>Babesia canis</i> and other species 'babesiosis' (common)	No for the common species, and very unlikely for the rare species	Yes - via ticks, so can occur without direct contact
<i>Anaplasma</i> spp. 'anaplasmosis' (less common)	Yes - <i>Anaplasma phagocytophilum</i> * can cause disease in humans	Yes - via ticks, so can occur without direct contact
<i>Hepatozoon canis</i> 'hepatozoonosis' (less common)	No	Yes - via ingestion of infected ticks (albeit ones that are frequently found in the UK), so can occur without direct contact
Tick-borne encephalitis* (uncommon)	Yes - via ticks	Yes - via ticks, so can occur without direct contact

* These are found in the UK, but infrequently. Langford Vets Diagnostic Laboratories does not offer an assay for tick-borne encephalitis and, unlike most other infectious agents, dogs from North-Eastern Europe are at greater risk (as opposed to those from the Mediterranean basin). If requested samples could be sent out for this test.

Contact Us

T: 01934 852 422

E: sap@langfordvets.co.uk

Recommended testing for imported dogs

As only limited data are available regarding the prevalence of *Brucella canis* within individual countries and as human infection has the potential for life-changing consequences we, along with many other veterinary practices, are taking a cautious approach. We have therefore made a Langford Vets policy to test all dogs with a history of travel outside of the Island of Great Britain (including travel to Northern Ireland) – regardless of country travelled to or time spent there – for evidence of exposure to *Brucella canis* prior to performance of any diagnostic or surgical procedures.

Where dogs are presented in an emergency, we have capacity to perform a patient-side screening test, to enable us to continue with their care. However, under some circumstances further testing may be required and diagnostic testing may be limited pending results of these further tests.

What do we recommend testing for?

In order of priority, in clinically well dogs:

- ***Brucella canis*** – basic and quantifiable serology available (various serum antibody tests to detect exposure). Mandatory at Langford Vets prior to any diagnostic or surgical procedures. The type of test(s) performed will depend upon country of origin / transit.
- ***Leishmania infantum*** – quantifiable serology (detecting and quantifying antibody test to detect exposure and predict risk of disease). Positive results are possible in vaccinated dogs.
- ***Ehrlichia canis*** – basic serology (basic antibody test for exposure).
- **Heartworm (*D. immitis*)** – basic serology (basic antigen test for presence of adult worms) plus modified Knotts on whole blood (direct visualisation of larval worms) **Only if over 6 months age**
- ***Babesia species (various)*** – quantitative PCR of whole blood (detecting, quantifying, and characterising the organism, if present)
- ***Anaplasma phagocytophilum / Anaplasma platys*** – basic serology (basic antibody test for exposure)
- ***Hepatozoon canis*** – quantitative PCR of whole blood (detecting, quantifying, and characterising the organism, if present)

The basic serological test for *Ehrlichia*, *Anaplasma*, and *Dirofilaria* is a combination test, which also includes a screen for *Borrelia burgdorferi* (the cause of Lyme's disease). Where any of these initial screening tests are positive, additional infectious disease testing may be indicated (e.g. PCR of whole blood for *Anaplasma* or *Ehrlichia* if exposure was detected) along with general blood and urine profiles.

What samples are required?

The vet will collect ~6ml of whole blood from a vein in the neck or the leg (patient dependent), after clipping and cleaning the site. From this, 2ml is placed into EDTA tubes for PCR testing and modified Knotts, while 4ml

Contact Us

T: 01934 852 422

E: sap@langfordvets.co.uk

Recommended testing for imported dogs

is placed into plain / clot tubes. In the laboratory, the serum is removed from the clotted red cells and tested.

What if my pet is under 6 months?

Some tests would need to be deferred (e.g. heartworm screen), as the lifecycle of the parasite would not have reached a detectable stage before 6-7 months. Other tests, e.g. *Leishmania* and *Ehrlichia* serology, would be performed under caution – as a positive result could represent either infection or presence of maternal antibodies, while a negative result could occur in early infection. Alternatively, PCRs can be used to screen for *Leishmania* (whole blood or conjunctival swabs) and *Ehrlichia* (whole blood) – as PCRs confirm infection and can detect infection before antibodies are produced; however, PCRs are less valuable as a screening test against these infections for most dogs as they generally miss more chronic infections than the antibody tests.

What if my pet has been tested prior to import?

We would request that any tests performed elsewhere (e.g. prior to import) are made available for review. Often not all the recommended tests have been performed prior to importation and sometimes the pet's unique microchip number has not been recorded on the paperwork (raising concern that we have results from a different dog). Ultimately, with the additional potential for a lag between exposure and a positive screening result additional tests would be recommended at some point; however, the timing of this screening would vary (dependent upon test(s) already performed, country of travel, and time since importation) and would be considered on a case-by-case basis.

Will my insurance cover for these tests?

Sadly, this is unlikely.

- Most insurance policies do not cover for screening tests in healthy animals.
- Most insurance policies do not cover for infections / diseases that were present at time of policy inception (whether you know about them or not)

Having said that, every policy is different – so if you have any questions, these should be directed at your insurance provider.

What about cats?

Cats can also be infected with various infectious agents nonendemic to the UK that have the potential to cause clinical signs, these include *Babesia felis*, *Leishmania infantum*, *Dirofilaria immitis* and *Ehrlichia chaffeensis*. It is important that your vet knows if your cat has a travel history, because this can influence the recommended tests were your cat to become sick. However, currently we do not recommend routine screening of well cats with a history of travel as, when compared to dogs, they have both a lower risk of infection and lower risk of onwards transmission to others (due to limited direct contact with other cats outside of their household and limited access to the parasites that transmit these infections).

Contact Us

T: 01934 852 422

E: sap@langfordvets.co.uk