



Cotswold Animal Hospital

401 South Sharon Amity Rd., Suite A, Charlotte, NC, 28211

Phone: 704-365-3787

Fax: 704-625-7112

Email: contact@cotswoldanimalhospital.com

Website: www.cotswoldanimalhospital.com

Feline Infectious Peritonitis Testing

Author: Kristiina Ruotsalo, DVM, DVSc, ACVP & Margo S. Tant, BSc, DVM, DVSc

What is feline infectious peritonitis (FIP)?

FIP is a disease caused by a mutated strain of coronavirus. This mutation allows the virus to spread throughout the body within specific white blood cells called macrophages. Organs and tissues that normally contain large numbers of macrophages, such as the liver, spleen, and lymph nodes, are therefore targeted by FIP, resulting in a variety of clinical signs that may include the production of fluid within the abdominal and chest cavities.

When is FIP testing indicated?

Feline coronaviruses are common and are found in the intestinal tract of many healthy cats. The mutated strain of coronavirus that causes clinical disease is uncommon. The number of cats exposed to and therefore carrying antibodies to feline coronavirus is high (estimated to be up to 30% within the general cat population and up to 80% within catteries), but the proportion of cats developing FIP is small.

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Therefore, routine blood testing for feline coronavirus is not clinically useful. Instead, testing is restricted to those cats in which a diagnosis of FIP is strongly suspected due to clinical signs and other supportive laboratory data. Occasionally, catteries and multi-cat households wanting to maintain a coronavirus free status may routinely test for the presence of feline coronaviruses.

What blood tests are available to detect FIP?

FIP testing is somewhat problematic. Although FIP is caused by a mutated strain of coronavirus, exposure to any strain of feline coronavirus will result in the induction of an immune response and the production of antibodies. There is currently no blood test that will distinguish between antibodies produced against a non-FIP strain of coronavirus, and a FIP-causing strain of coronavirus.

To complicate the diagnosis even further, a negative blood test for coronavirus antibodies does not entirely rule out the possibility of FIP infection in a sick cat, because detectable antibody concentrations may be reduced in animals with the terminal form of FIP.

Even newer PCR (polymerase chain reaction) tests that have been designed to detect viral genetic material are unable to distinguish accurately between the different strains of coronavirus.



Are any other tests for FIP available?

A working diagnosis of FIP is typically made on the basis of the cat's clinical history as well as supportive laboratory data. Because the FIP coronavirus can invade many different tissues, routine blood biochemistry panels may indicate evidence of kidney or liver damage. Due to the inflammatory nature of the tissue changes seen with FIP, protein levels in blood are often increased. None of these biochemical changes is specific for FIP, but they can provide additional evidence supporting the diagnosis of FIP.

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Some cats with FIP develop effusions (fluid accumulations) within the abdominal or chest cavities. Your veterinarian may collect a sample of this fluid and submit it to a veterinary laboratory for evaluation by a pathologist. FIP related effusions have a characteristic protein content and appearance when examined microscopically. The identification of such fluids is again supportive of FIP but not absolutely diagnostic for the disease. Occasionally, using either PCR or a special technique called immunocytochemistry, the presence of coronavirus can be demonstrated within inflammatory cells found in these effusions.

Definitive diagnosis of FIP in the living cat relies on tissue biopsy and microscopic evaluation of affected tissue for inflammatory changes that are characteristic of FIP. Demonstration of the coronavirus within tissue samples by use of immunohistochemistry (a process whereby antibodies specific for coronavirus are applied to the tissue sample) can also aid in further confirming the diagnosis of FIP.