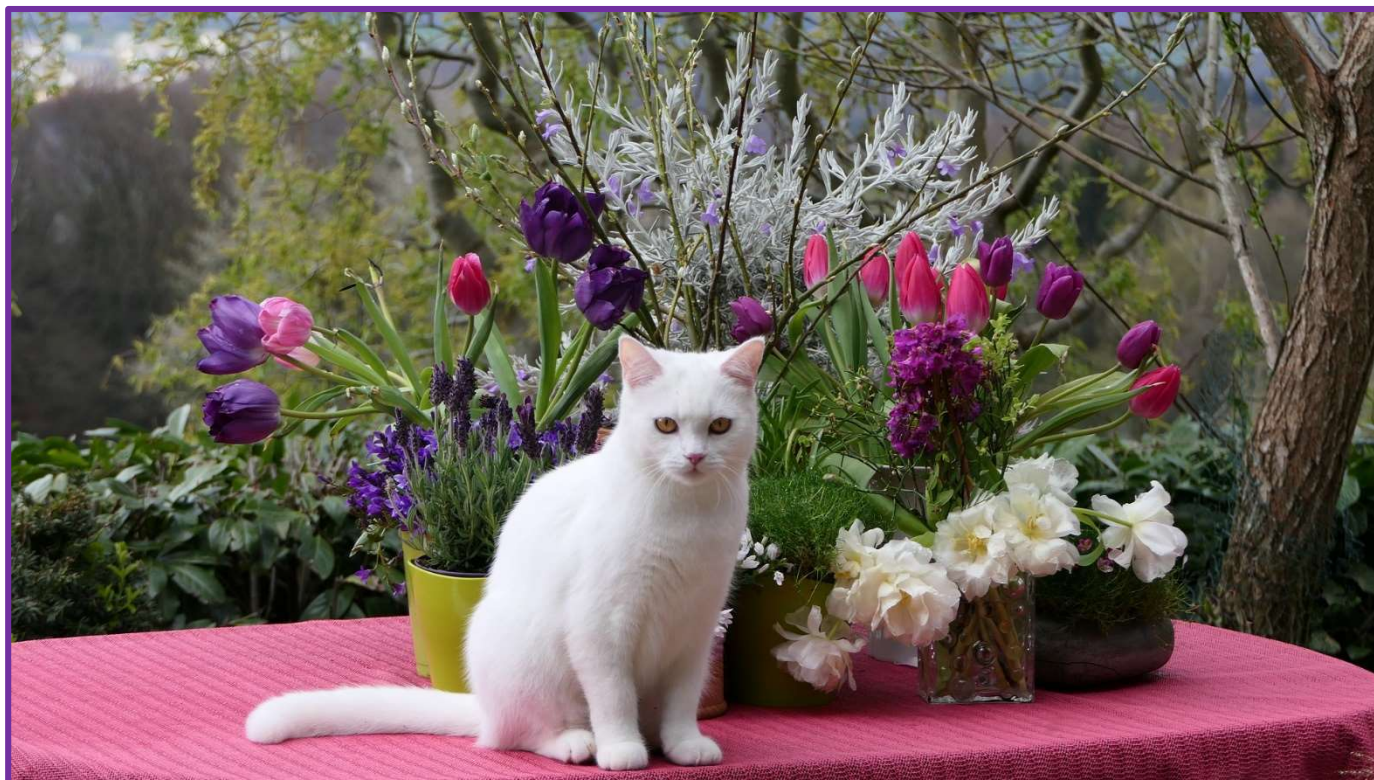




# Spring Newsletter



*“Expect to have hope rekindled. Expect your prayers to be answered in wondrous ways. The dry seasons in life do not last. The spring rains will come again.”*

*Sarah Ban Breathnach*

Needless to say, 2020 has been quite an eventful year so far... and it is only March. The global outbreak of Covid-19, or coronavirus, continues to evolve, and disrupt, many aspects of our daily lives. This is a difficult and uncertain time, and our first concern is for you and your families. We hope that you are all safe and taking precautions to stay that way.

On a happier note, winter has officially ended! Although it may not feel like it with a global pandemic bringing some dreariness into our days... **Spring has now begun!**

At EndFIP®, we have always considered ourselves, and everyone associated with us, as family. Today, this sense of community – sharing our strength, support and care for one another – seems more important, more fragile, and more meaningful than ever. As we face the uncertainty of the current moment, one thing we know for sure is that **we’re all in this together.**

These are extraordinary times, and EndFIP® is no ordinary organization. Our team is spread out across several countries and we have been focused on their health and safety. Since our launch in 2018, EndFIP® has remained a resilient and spirited organization. Our approach, is never to retreat but to find a way forward, guided by science, with swiftness and compassion, and above all with kindness towards all animals.

EndFIP® knows this is a difficult time for all of us. We have always been a science-driven organization and now is as good a time as any to embrace a reasoned, methodical approach to this new ground-shift. We know that the significant challenges facing cats around the world will not stop for this pandemic. We will continue our work – educating, informing, and inspiring people, to create lasting solutions to prevent cats from becoming infected with feline coronavirus, thus preventing FIP altogether - with focus and heartiness to deliver on the promise you so kindly have helped support.

We are encouraged by all the good we are seeing in our communities. If there is a small consolation that has arisen from the Covid-19 crisis, it is staying connected with family, colleagues and friends. And although we are in treacherous waters, we are confident that we will, as a family, support one another and emerge stronger. In this newsletter, we will tackle several topics related to feline coronavirus and Feline Infectious Peritonitis. We will also address the delicate subject of grieving a FIP cat at this trying time. To celebrate the season of hope and new beginnings, EndFIP® will share some inspirational quotes to brighten your day.

We are tremendously grateful to each of you as friends within the EndFIP® family. Thank you for being passionate advocates and for all that you do in the global quest to end FIP. We appreciate your friendship, loyalty, and support, and never take it for granted. You are in our thoughts, and we hope you, and your loved ones are safe and well during this historic – but temporary! – period for humanity.

Sending abundant blessings,

Maria S. Bonino  
Founder/Director  
EndFIP® | Luca Fund for FIP Research



Take care of yourselves and each other by following the World Health Organization guidelines which you can find at: [www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public](https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public)

**STAY HOME**

**STAY SAFE**

**WASH YOUR  
PAWS**





## Information about Feline Coronavirus (FCoV)

Feline coronavirus was discovered by J.M Ward in 1970. The virus is enveloped and contains a single-strand positive-sense RNA. The name coronavirus comes from the shape of the structure which resembles a crown (corona in Latin) when viewed under an electron microscope. The virus (crown) spikes are what attach it to the cell when it infects a cat.

FCoV belongs to the Coronaviridae family, sub-family Coronavirinae, genus Alphacoronavirus, species alphacoronavirus 1. FCoV contains the largest known viral non-segmented RNA genome. It has an enveloped virion which is composed of four major viral proteins: spike, envelope, membrane and nucleocapsid.



The virus may be genetically classified into two genotypes of FCoV (**FCoV I** and **FCoV II**) both genotypes have the ability to cause FIP. **FCoV I** genotype has been estimated to be responsible for approximately 80% to 95% of FCoV infections in the field.

Coronaviruses in general are ubiquitous in the environment. You may recognize the names SARS (Severe Acute Respiratory Syndrome) and MERS (Middle Eastern Respiratory Syndrome) both diseases are caused by coronaviruses. Both are believed to have originated from bat coronavirus reservoirs and are thought to have jumped species to humans, possibly via the Asian Palm Civet (*Paradoxurus Hermaphroditus*) a mammal that resides in the Southeast Asian tropical rainforest, as an intermediate host.

Very important to keep in mind: **FCoV does NOT infect humans.** Commonly coronaviruses are host specific, only infecting closely related species. FCoV is

genetically similar to the canine coronavirus and it has been postulated that **FCoV II** originated from a double recombination event involving FCoV I and canine coronavirus I.

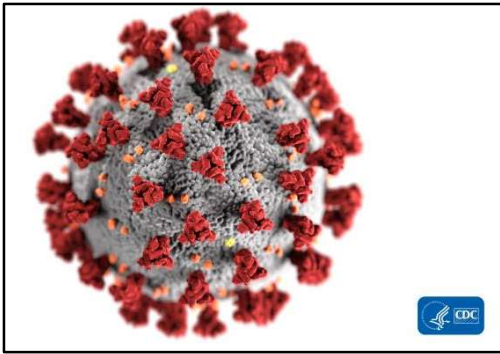
In lay terms, FCoV is a virus of the gastrointestinal tract. Most infections are either asymptomatic, or cause diarrhea/mild intestinal upset; especially in kittens as maternally derived antibody wanes at between 5 and 7 weeks of age. Feline coronavirus (FCoV) is endemic globally and perhaps you are wondering why some cats developed FIP whilst the vast majority of FCoV infected cats thankfully don't.

The pathogenesis (development of a disease) of FIP is complicated: the reductionist view is that it is entirely due to mutation of the virus. Whilst this internal mutation theory is the most widely accepted, no consistent mutation has been identified. The holistic approach is that FIP occurs as a result of a number of factors, including viral load, the immune status and general health of the cat.



Want to learn more. Visit: [www.endfip.com/etiology/](http://www.endfip.com/etiology/)

### Special Note:



Discussing human coronaviruses is beyond the scope of the EndFIP® Global Initiative. This outbreak of respiratory illness (Covid-19) caused by 2019-nCoV/SARS-CoV-2 is a very fluid situation. Sadly, as the Covid-19 continues to spread, so does unverified, misleading and in some instances clearly false information. At this time, it is important to keep in mind that in issues involving medicine and science, we all need to act based on facts and not fear, evidence and not emotions. Extensive and timely information can be obtained by visiting the following sites:

<https://www.who.int/health-topics/coronavirus>

<https://www.cdc.gov/coronavirus/>

### A word about FIP Diagnostics

Feline Infectious Peritonitis is a shattering infectious disease of felids (domestic and wild) infected with feline coronavirus (FCoV). FIP diagnosis is notoriously challenging and is often only confirm post-mortem (autopsy). The clinical signs associated with the disease are non-specific and could be related to many other diseases and infections. Both chronic and acute forms of FIP occur, with cats presenting vague signs including (amongst others) the following:

- Pyrexia (fever)
- Lethargy
- Reduce appetite
- Anorexia (loss of appetite)
- Weight loss
- Mood changes
- Neurological and/or ocular changes
- Acute form of FIP commonly presents with a build-up of viscous fluid in the chest or abdomen



FIP occurs ONLY after a cat has become infected with feline coronavirus (FCoV), however, unlike many other infectious diseases, FCoV serology alone is insufficient to determine whether the cat has or does not have the disease (measurement of FCoV antibodies is NOT useful for the diagnosis of FIP). Many cats are co-incidentally seropositive but do NOT develop FIP.

The pathogenesis (development of a disease) of FIP remains poorly understood even after decades of research. This lack of knowledge impedes diagnosis, treatment and prevention. VERY important to keep in mind: The majority of FCoV infections cause only mild-enteritis, the infected cat suffers no long-term disease and eventually eliminates the virus. In a very small number of cases, the infected cat continues to shed FCoV in feces for a prolonged period, becoming a virus carrier.

**FIP occurs in 5% - 10% of the FCoV infected cat population** and exists mainly in two forms, a “wet” form where effusion is observed (ascitic, thoracic or pericardial) and a “dry” form where there is no effusion present but acute vasculitis is observed and granulomatous lesions may occur on various organs, leading to additional clinical signs.





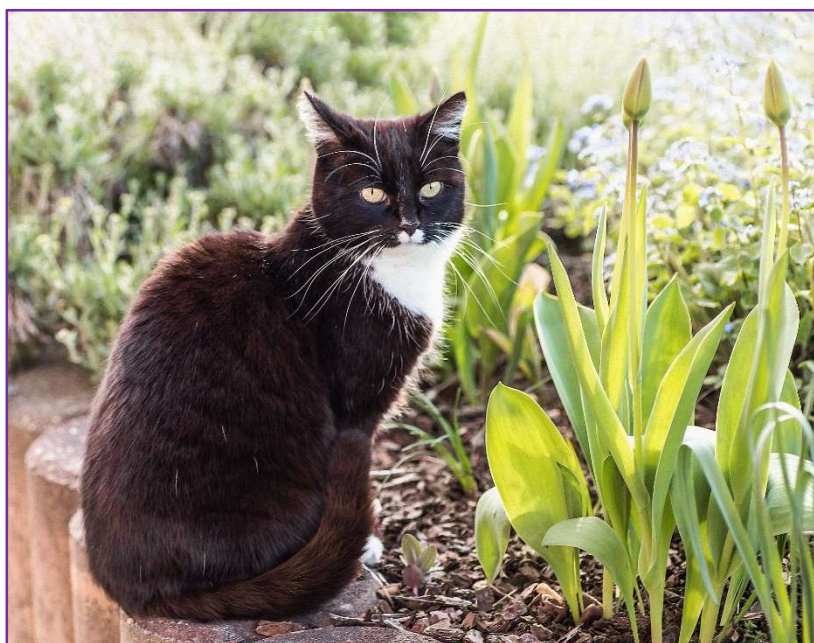
Ante-mortem (in vivo) diagnosis of FIP in cats without an effusion is especially difficult. A number of new diagnostic tools are in development to improve FIP diagnosis; however, there is currently no gold-standard, non-invasive tool available for the diagnosis of dry FIP. Wet FIP can be confirmed by the evidence of FCoV RNA in cavity effusion (typically thoracic or abdominal). A battery of tests may be used to help diagnose FIP including the following:

- FCoV serology
- FCoV viral RNA detection
- Hematology
- Cytology
- Biochemistry

A number of the parameters and their related reference ranges were first described decades ago. Sadly, FIP still presents many challenges for veterinarians to diagnosed. Often by the time a diagnosis of FIP is reached, unfortunately an affected cat has very little time left to live; either it dies naturally of the disease or is euthanized due to the progression of the disease and associated suffering.

Want to learn more.

Visit: [www.endfip.com/fip-in-depth/](http://www.endfip.com/fip-in-depth/) | [www.endfip.com/diagnosis/](http://www.endfip.com/diagnosis/)



*“The beautiful spring came; and  
when Nature resumes her loveliness,  
the human soul is apt to revive  
also.”*

*Harriet Ann Jacobs*

## *Coping with the loss of a cat to FIP amid the Covid-19 Pandemic*

Coping with the pain and sorrow of your cat dying of FIP can be one of the most difficult things you will ever need to face. Cats can be incredibly affectionate, loving and loyal. They remind us to live in the moment and to love unconditionally. They also remind us to be adventurous and playful. They help us to become better human beings. And when they are taken from us so untimely and abruptly by FIP, they leave a devastating and profound sense of helplessness and an immense empty space in our lives.

Thanks to 24/7 news cycle, and social media, we are now treated to an unrelenting play-by-play of shocking, distressing and upsetting daily stories about the Covid-19 pandemic. To all grieving FIP parents, the relentless mention of the word “coronavirus” can bring a wave of emotions extremely difficult to deal with. To the vast majority of the public, coronavirus is something that just recently has come to their attention. To all of us, touched and changed by FIP, the mere mention of the virus sends chills down our spine.

As both diseases are caused by coronaviruses, even if many years has gone by, the constant coverage of this latest pandemic could become a trigger to reignite the pain, the grief, and other feelings related to the loss of a cat to Feline Infectious Peritonitis.



Grief is neither an illness nor a pathological condition. It is a normal and expected process that allows you to maintain connection to your beloved cat while you simultaneously assimilate, accommodate, and find ways to go forward in life. It is a needed process which will help you make sense of the past (what had happened to your cat), create a lasting memory out of what can no longer be, and incorporate the memory into a new, hope-filled future. If you lost a cat to FIP recently, you may not see it now but there is light and happiness after FIP.

The grief process is shaped with pain, inconsistency and tension, things we all prefer to avoid. Trying to suppress, deny or ignore grief will not make it go away, sooner; or later it will push its way through to the surface like a volcano's molten lava. When people deny or ignore grief, they can experience physical effects such as headaches, backaches, but also grief finds emotional outlets, especially anger which is a very common reaction for an FIP parent.

We need to make sense of it all and it is quite easy to blame the veterinarian and/or ourselves. There is a sense of frustration, we need to know why did it happened and blame someone for taking our beloved cat away. In reality, there is no one to be blamed for FIP, except for the vile feline coronavirus (FCoV).

Since first being discovered by American veterinarian Jean Holzworth at Cornell University in 1963, FIP is one of the most studied feline diseases and yet, it remains one of the most enigmatic viral diseases of the cat. In addition, feline coronavirus (FCoV) is undoubtedly one of the most poorly understood feline viruses and to make things worse there is a wall of silence and shame around both FCoV and FIP. Many decades later, we still have no proper protective vaccine, nor FDA-approved treatment. If there's a silver lining to the Covid-19 pandemic, it's that perhaps it will contribute to advances in the prevention and clinical treatment of FIP.

EndFIP® extends empathy and sympathy to all marked by FIP. Please acknowledge your grief; take time to grieve, surround yourself with caring people who will embrace what you are experiencing - you need to understand that unresolved grief can cripple you and rob you from living fully again. On the other hand, those who engage in the grieving process can emerge from the experience better, healthier and happier.

EndFIP® aims to inspire hope and work in partnership to help alleviate the human suffering and deep grieving caused by FIP. We are here to help, REACH OUT to us at: [griefsupport@endfip.com](mailto:griefsupport@endfip.com)





**“What though the radiance which was once so bright, be now forever taken from my sight. Though nothing can bring back the hour of splendor in the grass, of glory in the flower; We will grieve not, rather find strength in what remains behind.”**  
*William Wordsworth*



#### **EndFIP®: A vision and a mission**

- Bring awareness
- Raise funds for research
- Eradicate FCoV and end FIP

Help us accomplish our goals. Your donation is both needed and appreciated. The Luca Fund for FIP Research is committed to exclusively support research that does not use laboratory cats and does not conduct experimental infection of healthy cats with a deadly virus. Help us end FIP, so that one day, no one will have to go through the pain of losing their cherished cat to a disease that has claimed so many for so long.

**LUCA FUND**  
**for FIP Research**



American Alumni of Glasgow University

The Luca Fund for FIP Research is part of the global vision of the EndFIP® project. Your donation to the Luca Fund will be applied to studies conducted at the University of Glasgow School of Veterinary Medicine. The Luca Fund for FIP research is a special fund of the American Alumni of the University of Glasgow established in 2018 to accept tax-deductible donations for Feline Infectious Peritonitis research. AAGU has been recognized by the IRS as a section 501(c) (3) charitable organization. All donations to AAGU are deductible as charitable contributions to the full extent permitted by law.



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**[www.LucaFundforFIP.com](http://www.LucaFundforFIP.com)**

