

Asthma

Asthma, also known as Feline Asthma Bronchitis Complex (FABC) is fairly common in cats, and is very manageable with medications. However, untreated it can lead to serious breathing problems.

Causes and Pathophysiology:

- There are multiple causes of asthma in cats. Probably the most common is allergies, but infections, trauma, and parasites can also lead to asthma. There is no way to definitively diagnose asthma or its causes in a cat, but based on symptoms and response to treatment, we can diagnose it presumptively.
- Asthma occurs when your cat has a hard time getting air in and out of their lungs. This most commonly is from a buildup of mucus in the lungs as a result of inflammation.
- In normal lung function, as your cat breathes in and out throughout the day, every time they inhale they take in microscopic particles floating in the air. These particles consist of a little of everything – dust, pollens, dander, debris, etc. To keep these particles from building up in the lungs, the immune system forms mucus to catch the debris in the lungs, and with little hair like projections called cilia, which are constantly moving in an exit direction, move the mucus up the lungs, into the trachea, and the cat will swallow it over the course of the day without even noticing. This is all part of the body's normal process to keep the lungs clear.
 - The average cat will swallow up to 12 gallons of mucus a year without being aware of it.
 - The average human will swallow up to 182 gallons of mucus a year without being aware of it. Isn't that appetizing!
- In FABC, either the lungs are unable to rid themselves of the mucus due to ineffective cilia or other damaged areas of the lungs, or the immune system is over reacting to an antigen, such as an allergy to pollen, and excessive amounts of mucus are formed, too much to be removed through normal mechanisms.
- As a result, their lungs start drowning in their own mucus, so they spasm to try and expel the mucus out. This is also known as coughing.
- As an end result of chronic mucus build up in the lungs, we can see emphysema, scar tissue build up, and in some cases, even have a lung lobe consolidate down from chronic scarring.

Symptoms:

- **Coughing.** This is probably the most common symptom that we will see in cats with asthma, but not every cat with asthma will cough. Coughing in a cat looks and sounds very much like they are trying to hack up a hairball, but either nothing comes up, or just a small amount of mucus comes out. This can also result in full vomiting, but not regularly.
- **Wheezing.** What you will see with this is your cat may be breathing harder or faster, and may make noises such as when air is trying to pass through too small of an opening.

- **Exercise intolerance.** This is primarily seen with asthma, but can also be seen with heart disease. With this, your cat may be playing or running, and then suddenly stop and breathe very hard.

Diagnosis:

- There is no nice easy way to definitively diagnose asthma in a cat. We will usually go based off of symptoms, a chest x-ray, and possibly by obtaining cells from the lungs in what is called a transtracheal wash.
 - **Chest x-ray.** If your cat is exhibiting signs of asthma, the first thing we will want to do is to do a chest x-ray. Early in the stages of asthma, we will not be able to see any abnormalities on a chest x-ray, but we can at least mostly rule out other causes such as pneumonia, fungal disease, heart disease, cancer, etc. In later stages we will be able to see the scar tissue build up in the lungs.
 - **Transtracheal wash.** This is not something we do commonly, as there are potential significant risks associated with it, and the benefits may be small compared to the risks. This involves anesthetizing your cat, then flushing sterile saline into their lungs, and then pulling it back out to try and collect cells from inside the lungs to determine the type of cells mostly present. This can help distinguish between multiple different causes of asthma symptoms, but there is also a risk that your cat will stop breathing due to the fluid we just flushed their lungs with, and there is a very small risk that we might not be able to get them breathing again.
 - **Symptoms and response to treatment.** We will most commonly go off of symptoms, and then do a steroid trial. If the symptoms go away, while it is not completely diagnostic for asthma, it does make it much more likely.

Treatments:

- The primary treatment for asthma is to suppress the immune system to reduce the amount of mucus being developed in the lungs. This is almost always done with steroids. We may also give medications that will help open up the airways to help get air through, these are known as bronchodilators. Both of these medications can be given in a variety of ways, but the most effective with the least side effects are through inhalers.
 - **Steroids.** These are the mainstay of treatment in cats. Prednisolone is used most commonly, but other steroids such as dexamethasone and depo-medrol are also routinely used. The purpose of steroids is to reduce the overall mucus being developed. These can be given systemically as pills, liquid, injections, or as ear paste. These can also be given through an inhaler, which is the preferred route. The primary side effects of systemic steroids are diabetes and Cushing's disease. The primary side effects of inhaled steroids are an increased risk of lung infection, but that is not common. Any cat that has been diagnosed with asthma, that can tolerate steroids, should be on them for life.
 - **Bronchodilators.** These are to help open the airways to get air moving past the mucus. These are only to be used as an adjunctive treatment. If given alone bronchodilators can falsely give the impression that the cat is fine, until all of the sudden they just cannot breathe because their lungs have continued to fill with mucus. The three most common

bronchodilators used are aminophylline, terbutaline, and albuterol. These can also be given either systemically as pills, liquid, or injections, or through an inhaler.

- **Immune suppressants.** When cats cannot tolerate steroids for whatever reason, we will try immunosuppressants. The most common of these used in asthma is cyclosporine. This will work for some cats, but can only be given in systemic form, in pills or a unpleasant tasting liquid, it is more costly, and not nearly as effective as steroids.
- **Antibiotics.** If we are not sure of the initial cause of the asthma, we may also try an initial course of antibiotics for possible infection.
- **Other medications and/or diagnostics.** If we do an x-ray, and the lungs do not look like typical asthma, then we may try some other treatments or do additional tests to rule out other causes of asthma like symptoms.

Prevention and Management

- While we cannot completely prevent asthma, there are things you can do in your environment to minimize your cat's risk of developing asthma, and to minimize symptoms once it does occur.
 - **Smoking.** Just like in people, smoking has been linked to causing asthma in cats. Don't smoke around your cat. Smoking releases a lot of particles in the air that your cat's lungs have to then remove, and many of these particles are toxic, and are more likely to result in increased mucus production.
 - **Air fresheners.** These also release multiple particles into the air which can aggravate asthma.
 - **Vacuuuming.** This will stir up a lot of dust that can aggravate asthma. Put your cat in a different area of the house when you are vacuuming, and don't let your cat back into the area for a few hours until all of the dust has settled. Hepa vacuum filters, if your vacuum can use them, will help also.
 - **Aerosols.** Anything that increases particles in the air such as hairsprays, perfumes, etc., can aggravate asthma.
 - **Air purifiers.** These have been shown to reduce air particles. Even allergy filters on your ventilation system will help reduce air particles and so help minimize asthma symptoms.

Many cats can live a normal life with asthma, but prompt diagnosis and adequate treatment are critical. There is an excellent website online that was written by an owner, but has been contributed to by multiple vets that has very good information about asthma, including videos of a cat coughing, and instructions on how to get a cat to accept an inhaler. That website is www.fritzthebrave.com.

If you have any questions or concerns about your cat, please contact us at All Feline Hospital at 402-467-2711 or info@allfelinehospital.com.