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## Medicine: Senility

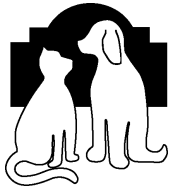
Sometimes, as a pet owner, you may wonder if your pet is getting senile. Senility is a decrease in the function of the body and mind. When our pets get senile, they don't seem to be as playful as they once were. Maybe they have been having accidents in the house. Well, you could be right. Just like in people, as our pets age, their brains age. And one aspect of this aging could be senility. Not all dogs (just like not all people) experience senility. Senility can be a normal aging change in dogs. It can also be a symptom of a major problem developing. Senility in either event certainly affects the relationship that dogs have with their owners. It is important for you to know the symptoms of senility, what the causes are what diseases can appear to be senility, and what can be done to help dogs with senility. This article explores this very common problem of our older pets.

Senility, also known as dementia, is just as common in dogs as it is in people. The most common complaint that we hear about at our hospital is loss of housebreaking and abnormal sleep/wake times (wandering/barking at night). Some of the common symptoms of senility are:

- slowness in responding to commands (when obedience training used to work)
- decreased response to previously demonstrated learned behavior (getting lost in the yard or house for example)
- decreased interaction with owners (lack of greeting and/or attention-seeking)
- increased irritability/increased aggression
- screaming/howling/barking especially at night
- Does not recognize familiar people/places
- Wandering/pacing
- Staring into space or at walls
- Having "accidents" in the house
- Changes in sleep/wake cycle

It is important to note that these symptoms do not include blindness, deafness, seizuring, fainting, or tremors. Those are signs of other problems.

There are several causes of senility. Generally, the type of senility seen in most dogs is a slowly progressive, gradual senility. This is caused by ·wear and tear· on the brain cells-loss of brain cells over time and decreased function due to accumulation of toxins such as free radicals, which are caused by oxidative damage. Increasing the anti-oxidants in the diet can sometimes reduce these symptoms of old age.



There are also causes that cause a much more sudden onset of senility.

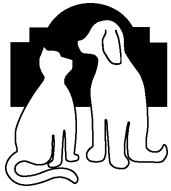
These diseases include:

- **Liver disease:** When the liver is not working properly, the metabolism it performs is slowed. One of these metabolic functions is removal of waste products from proteins. In the liver, ammonia (a protein by-product absorbed through the intestines) is converted to a product called urea that goes through the blood into the kidneys and then the urine. When the liver stops working well, this process is slowed and the ammonia levels can increase. When these circulating ammonia molecules get into the brain, they can act as chemical signals called neurotransmitters. These can cause the brain cells to “misfire” causing many symptoms including depression, lack of responsiveness, and staring into space. Eventually, it could lead to seizures, coma, and death.
- **Infections:** Infection from bacteria, viruses, fungus, and parasites can cause damage to the brain, causing acute loss of many higher functions
- **Toxins:** many toxins can cause liver damage and secondary brain damage, or cause direct brain damage
- **Tumors:** Brain and spinal cord tumors can cause signs of dementia along with more severe neurological signs

## Canine Cognitive Dysfunction Syndrome

This disease is a cause of acute progressive senility in dogs. It has only been recognized in the last few years, as through control of other diseases pets are living longer lives. This disease is very similar to Alzheimer-s disease in humans. Like humans, the cause of this disease is an accumulation of protein called beta-amyloid on the nerve cells. This causes the electro-chemical conduction (which is how signals work in the nervous system) to cause the symptoms. Basically, signals get lost along the way. Symptoms are similar to the other causes of senility, except the onset and progression are more rapid. Dogs can experience one, some, or all of the described symptoms. This disorder generally starts at about age 10, and risk increases with age. Just like in humans, there is no cure for this disease. Nor is there a diagnostic test, except absence of other causes on the testing performed. The only way to diagnose the disease for certain is via brain biopsy (which is certainly highly invasive.)

There is a treatment for this disease. The drug given helps to decrease the symptoms of the disease by changing the levels of the chemicals in the brain called neurotransmitters, which allow the brain to function effectively. The drug is called Anipryl (Selegiline). This drug increases the neurotransmitter called dopamine. Dopamine triggers certain receptors in the brain which helps to increase the cognitive pathways. The drug also breaks down into powerful neurostimulants as well. This drug can be used to treat other disorders, such as Cushing-s Disease. Adverse effects are rare, but could include vomiting, diarrhea, restlessness, and lethargy. Because of the restlessness, it is recommended to give this drug in the morning. It is important to note that the drug does not cure the disease, nor does it slow the progression of the amyloid deposition. It reduces the symptoms and has improved the quality of life of hundreds of dogs.



## The Bad Stuff

Brain tumors, infarcts, clots, and infections can also cause the symptoms of senility. Many times these disorders are correctable. To diagnose these disorders, a general examination and lab work are first performed. If no cause is determined, a referral to a veterinary neurologist (a specialist in the nervous system) is recommended. They can perform the necessary tests, such as a spinal fluid analysis and a MRI to determine the cause of the disease and institute appropriate treatment. Dogs that should have these test performed are:

- Dogs that are worsening or not improving with the other therapies for senility
- Dogs that are experiencing other neurologic symptoms that are not associated with senility such as seizures, falling, blindness, and deafness
- Dogs that have a very acute (within a matter of days) onset of symptoms

Ideally, these tests should be performed on all dogs that are experiencing senility. Unfortunately, the tests are quite expensive, done at few facilities, and require general anesthesia. Since senility occurs in older pets, anesthesia is more of a risk.

Even if your pet is diagnosed with a brain tumor, it's not necessarily the end. There are several surgical options available at specialist hospitals and teaching hospitals. Some medications are available if surgery is not an option that can reduce tumor size or at least help to alleviate symptoms.

## What can be done for senility?

As a first step in determining whether or not your pet is experiencing senility and why is a thorough history and examination is crucial. If no cause of the senility can be determined based on this examination, lab work is recommended to check for liver abnormalities and possible toxin exposure or infection.

If these tests are normal one of the following maybe recommended, depending on examination and history:

- further testing/referral to rule out tumors/infections/infarcts/clots
- if Cognitive Dysfunction Syndrome is suspected, Anipryl may be recommended
- if the senility seems slowly progressive a special diet made by Hill-s maybe prescribed. It is called b/d (brain diet) and is designed to help reverse the free radical damage in the brain
- if one of these treatments is tried and is unsuccessful, another treatment maybe tried

All in all, there is a treatment for senility in our pets. Unfortunately, most people don-t know that the symptoms associated with our aging pets- brains can be reduced. There is something that can give our beloved pets the sparkle back to their eyes. If you or your friends have an aging pet they think might be senile, please have them schedule an appointment. There is no reason to delay-you can help your pet to fight the rigors of age.