

Heathmont Animal Hospital



Seniors' Club Health Guide

Understanding common diseases in ageing pets



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Introduction

Welcome to the Heathmont Animal Hospital Seniors' Club! A club designed to give you the best chance of giving your beloved pet the best quality of life possible. As cats and dogs age much faster than humans (approximately 7 times faster), it is important to pay close attention to any changes you notice in your pet as early detection of disease allows for better management of many conditions associated with ageing. To help you understand what to look for and how to manage these conditions, we have put together this guide to caring for your senior pet.

Physical and Behavioural changes in Senior pets

Eyes: Dogs and cats are better at detecting movement and seeing things in the distance than humans. Like humans they tend to get more long sighted as they get older and so often can fail to see things that are close to them and can start bumping into things. In addition, the lenses in the eyes start to go cloudy due to years of exposure to UV light. This gives the eyes a bluish haze to them initially, then gradually the lenses go white. This can lead to blindness, especially in small dogs.



Ears: Just as in humans, the range of frequencies that older dogs and cats can hear gradually diminishes until many become almost totally deaf. This may make animals less responsive as there is less stimulation in their world.

Joints: Older dogs and cats become less flexible which has important implications for cats as they are often unable to groom themselves nearly as effectively as they used to.

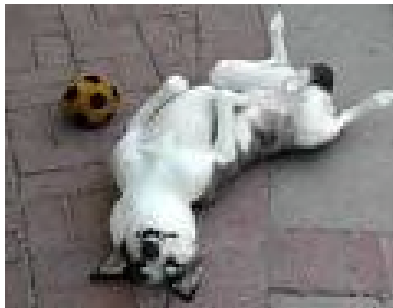
Muscles: Muscle atrophy occurs, especially noticeable in the hind legs which can make old animals unsteady.

If your dog shows any of these symptoms, make sure you get it checked out by the vet.

Treatment

Treatment of heart disease is aimed at alleviating clinical signs and reducing the work load of the heart so it can last longer.

1. Diuretics are drugs that increase urination in order to get rid of the excessive fluid in the system
2. ACE Inhibitors are drugs used for high blood pressure in humans and act to prevent the body from trying to store more fluid in response to poor circulation.
3. Other heart drugs. There are a range of other drugs available to treat heart disease as it progresses, all aimed at helping get the most out of a failing heart and maintaining quality of life.
4. Diet. Avoid high salt diets. Most super premium senior diets such as Hills and Eukanuba are OK. Beware of some supermarket brands such as Good-Os which have high salt content. Be careful of feeding human foods as these often have added salt.
5. Avoid stress. Exercise needs to be gentle but regular. If your dog is struggling then stop walking. Don't use choker chains when walking, rather use a harness or halter collar. Hot weather is a stress factor so be careful to keep dogs with heart disease as cool as possible in summer.



Skin and coat: Oil secretions tend to become thicker which can lead to problems of seborrhoea resulting in a greasy, smelly coat. Hair coat tends to get sparser.

Digestion: A slowing down of the digestive capacity means older pets are best fed smaller meals more often. A slowing of the metabolic rate means they need less food but sometimes diseases such as renal insufficiency mean they need more food. Nutrient requirements change so it is best to feed a diet designed for senior pets.

Behaviour: Sleeping patterns are changed with animals sleeping more during the day and less during the night. Older pets are naturally less active but this is often accentuated by diseases such as arthritis and senility so care must be taken before putting down a decrease in activity to 'just old age'.

Diseases of Ageing Animals

1. Arthritis

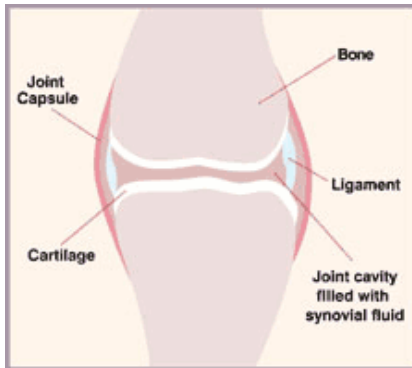
What is arthritis?

Arthritis simply means inflammation of a joint. There are a number of causes such as trauma, infection, immune mediated (rheumatoid) and degenerative osteoarthritis. The most common type of arthritis in old dogs and cats is osteoarthritis. Dogs suffer from arthritis more commonly than cats with around 1 in 5 adult dogs being affected by arthritis.

Osteoarthritis (OA) results in erosion of the cartilage, and the laying down of bone spurs around the joint. Predisposing factors include obesity, genetics, diet and lack of exercise.



Joints are made up of cartilage on the ends of the bones surrounded by a joint capsule and the inside surface of which is called a synovial membrane.



Cartilage has no nerves or blood vessels and only about 2% of it is made up of the cells that produce cartilage. The rest is a mixture of a fibrous material called collagen which gives the cartilage its strength, and in between are molecules called proteoglycans (PGs) and water. Proteoglycans are molecules made up of protein and sugars that attract water. This gives cartilage its resistance to compression.

In a normal joint, there is always a balance between the production and destruction of PGs with the breakdown products of the PGs being taken up by cells in the synovial membrane. In OA, the balance tips in favour of destruction of PGs and so there is erosion of the cartilage surface and loss of water from the cartilage. The breakdown products of PGs soon overwhelm the capacity of the cells in the synovial membrane to cope with them, so reinforcement inflammatory cells from the blood stream are called in. The result of this is swelling and inflammation of the synovial membrane which is what causes a lot of the pain in arthritis.

In addition to the changes in the cartilage and synovial membrane, the bone underneath the cartilage also undergoes changes largely due to interruption to the blood supply brought on by such things as obesity or the inflammatory process occurring in the joint. The result is changes that can be detected on an X-ray such as loss of bone, hardening of the bone, remodelling and death of bone.

Treatment

Treatment is generally by either giving antithyroid tablets on an ongoing basis or by treating with radioactive iodine. This latter treatment involves giving just one tablet of radioactive iodine which is selectively taken up by the thyroid gland resulting in the destruction of thyroid tissue. In most cases, only one treatment is necessary. The downside is that the cat has to be isolated in a registered facility for one week after, making the whole procedure fairly expensive. Antithyroid tablets, on the other hand, are inexpensive but can have side effects and can be a challenge to administer to old cats.

One problem of treating hyperthyroidism in cats is that the disease can mask the symptoms of kidney failure which can also be happening at the same time. For this reason we need to do follow up blood tests when treating for hyperthyroidism to monitor the cat's kidney function. If treated successfully, cats can live happily for a number of years with hyperthyroidism.

7. Heart Disease

There are a number of causes of heart disease but the most common is Congestive Heart Disease caused by leaky valves in the heart. Heart murmurs are not uncommon in older dogs but because the body has very good compensatory mechanisms, it is often a long time before clinical signs appear.

Signs of Heart disease

- Cough, especially after exercise or at night
- Exercise intolerance - reluctance to go on walks
- Enlarged abdomen - advanced heart disease can lead to fluid accumulation in the abdomen.



Signs of Periodontal disease:

- Bad breath
- Drooling
- Reluctance to eat hard foods
- Tartar build up on teeth
- Swelling under the eye (tooth root abscess)

Treatment

Treatment of periodontal disease in most cases requires a general anaesthetic to examine the mouth properly and perform a scale and polish of the teeth. Any necessary extractions can be done at this stage. The animal is sent home on an oral care program to try and maintain the teeth in as good a condition as possible. Without ongoing home care the teeth can need a teeth scale in as little as 6 months time.

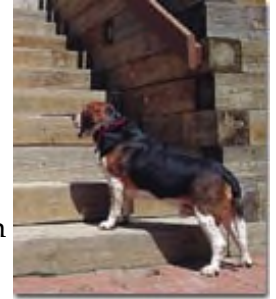
6. Hyperthyroidism

Many old cats suffer from overactive thyroid glands resulting in hyperthyroidism. Thyroid hormone regulates the body's metabolic rate and so these cats are in overdrive. They often eat a lot yet get very thin. They are often restless and tend to avoid warm spots to lie. The increased metabolic rate means the heart beats a lot faster and the extra work leads to a thickening of the heart muscle resulting in a fatal heart disease known as cardiomyopathy.

Diagnosis is by a blood test measuring the level of thyroid hormone. There may also be secondary changes in the liver due to the effect of the high metabolic rate.

Symptoms that indicate your dog or cat may have arthritis include:

- Favouring a limb
- Difficulty sitting or standing
- Sleeping more
- Seeming to have stiff or sore joints
- Hesitancy to jump, run or climb stairs
- Weight gain
- Decreased activity or less interest in play
- Attitude or behaviour changes
- Being less alert



If your pet has any of these symptoms for more than 2 weeks, make sure you bring them to the vet for a check-up. The key to effective treatment lies in early diagnosis which can be by physical examination and possibly X-rays.

Treatment

Arthritis is a complex disease. The best approach to management is a multifaceted one. It is important to realise that osteoarthritis is not a curable condition but rather a controllable one so treatment is always a long term consideration.

1. Weight Loss. By far, the most important factor is maintaining an ideal weight, so if your dog or cat is overweight it is vital to put them on a diet to get the weight down. We strongly recommend you sign your pet up in our Slimmer's club to ensure you get their weight down.

2. Exercise. Another simple but effective management tool is to ensure your dog is as fit as possible so regular gentle exercise is important. Obviously, this has to be done gradually as overexercise can lead to worsening of the inflammation in the joints.

3. Nutraceuticals. This is the name for oral supplements that have been shown to help in the management of arthritis. Because the cartilage is made up of collagen and proteoglycans, substances that contain these building blocks such as glucosamine, chondroitin and marine oils are helpful in arresting the progression of arthritis and alleviating symptoms. There are a number of products on the market now some of which are better than others. We have powder form, chewable sticks, treats and capsules. Some super premium foods have added glucosamine and chondroitin at either maintenance levels (eg senior foods) or therapeutic levels (eg Hills J/d). We are happy to discuss which product would be best for your pet.

4. Zydax injections. This is a tradename of pentosan polysulphate (PPS), a semisynthetic drug derived from the Beechwood tree that is similar in composition to a component of the polyglycans in cartilage. It is given under the skin once a week for 4 weeks then a booster course every 4-6 months. We have found Zydax gives a good result in 80% of cases. There is some research that shows that combining PPS injections with an oral supplement has a synergistic effect so gives an even better result. Zydax has few clinical side effects, so is a very safe product to use and remains the cornerstone of our approach to arthritis management.

5. NSAIDs. Non-Steroidal (non-cortisone) Anti-Inflammatory Drugs. These drugs are effective painkillers by virtue of their inhibition of the inflammation within the joint. All NSAIDs have potential side effects particularly gastrointestinal ulceration as well as liver and kidney damage. Fortunately NSAIDs have come a long way since the days of aspirin and the modern drugs are much safer to use even for long term use. Their major downside is the fact that they are not cheap. They are particularly useful for treating acute musculoskeletal pain and as an adjunct to Zydax injections.

5. Periodontal Disease

The most common disease in adult dogs and cats by far, is periodontal disease or gum disease. Like obesity, because it is so common and often doesn't have any observable, immediate effect, it is often ignored. The problem is, by the time an animal reaches 12 years or so, the teeth are so bad that they have to be treated or worse still, can't be treated properly due to anaesthetic risks. Bacteria from the mouth have been found in kidneys, liver and heart and so periodontal disease can contribute to damage to these organs. Periodontal disease leads to loosening of the teeth and inflammation of the gums and can be quite painful, even though the animal may still be eating. It is really important then to treat periodontal disease early and maintain good dental hygiene to avoid it developing.

Periodontal disease occurs because of plaque accumulation on the teeth. The most common reason for plaque accumulation is simply feeding soft foods and not cleaning off the residue, which allows bacteria to proliferate leading to plaque which in turn solidifies into calculus (tartar). To avoid this you either have to brush your pet's teeth (ideal but not always practical) or get the animal to chew something. The easiest way to get an animal to chew is by feeding appropriate raw bones but this is not always appropriate or practical so there is a range of alternative products available including rawhide chews, pig's ears, Greenies etc. We can advise you on the best alternative for your pet.



2. If you really want to feed your dog treats, measure out its dry food in a cup in the morning and give the dog treats from that cup during the day. At night give the dog the remainder.



3. Use a smaller bowl! Many owners just fill up the animal's bowl with food so using a smaller bowl helps to limit the amount you feed. It is much better to actually measure out the pet's food.

4. Use a prescription diet food. As you have to feed less than an animal's normal daily energy requirements in order to get them to lose weight, they can suffer from vitamin deficiencies making them lose energy. Diet foods have increased levels of vitamins to account for that and because you can feed more in volume, you are more likely to succeed in getting the weight down.

5. Exercise is important. If you have a dog, make sure it is exercised regularly (gradually increase exercise, especially in unfit or arthritic dogs). For cats, make sure the food bowl is a long way away from its sleeping area as often the only exercise the cat will get is walking to its food bowl and litter tray!

6. Join our slimmers program. By actually keeping track of your pet's weight you are much more likely to succeed in getting the weight down. Ask at reception for more details.



6. **Alternative treatments.** There are a number of alternative therapies advocated for arthritis. Many of these are unproven and so cannot be recommended although it is possible they may help in some cases. Of these alternative therapies, one which we have used successfully is acupuncture. Although we still do acupuncture occasionally, the introduction of Zydax has made acupuncture less attractive as the cost, safety and frequency is similar for the two treatments but Zydax involves only one needle and is a lot quicker!

7. **Ancillary aids.** There are a number of things you can do to make life easier for an arthritic pet. These include:

- Elevated feeding and water bowls so dogs don't have to bend down so far to reach them
- Ramps with non slip base to go over stairs
- Heat pads make a big difference in cold weather
- Warm bedding or keeping your pet inside at night
- Dog coats are a great idea for very old, thin dogs or dogs with poor hair cover. Some dogs like them more than others.



2. Kidney disease

Kidney disease is the leading cause of death in cats. Although many old dogs suffer from decreased kidney function (Chronic renal insufficiency (CRI)), the problem is most common in older cats.

What is chronic kidney disease?

The kidneys are responsible for filtering the blood, as well as excreting wastes and excess water. Without this filtering, the body's system can be overloaded with toxins, which can lead to death. Consequently, it is very important to be aware of the symptoms of this disease. Although there is no cure, early diagnosis can help slow the progression of the disease.

What causes chronic kidney disease?

Although it is not always possible to determine the cause of chronic kidney disease, the following include some of the possible causes:

- Congenital disorders: This includes an animal being born with one kidney or an impaired kidney.
- Kidney infection: A kidney infection can result from an untreated urethral blockage which causes urine containing bacteria to back up into the kidneys.
- Decreased blood supply to renal arteries: This can be caused by various factors such as diabetes, renal blockages, tumours, or arterial collapse.
- Toxic chemicals: In cold climates antifreeze poisoning is a common cause of kidney failure in pets. Some plants such as lilies can cause kidney failure as well.



The skin may fold in on itself creating pockets, which are ideal for the accumulation of oils and the development of infections.

Increased risk of cancer

The exact link between obesity and developing certain cancers is unknown. However, there have been studies which suggest that obese dogs tend to have an increased risk of developing certain types of cancers, including a particular type of cancer of the urinary bladder. A recent study also found that dogs that were obese at one year of age were at greater risk of developing mammary tumours.

Decreased quality and length of life

It is evident from the above discussion that the health, ability to play, even to breathe, are diminished in overweight dogs. Overweight dogs may become more irritable due to being hot, in pain, or simply uncomfortable. Overweight dogs die at a younger age than those maintained at an optimum weight.

It is clear that we are not contributing positively to our dog's health when we allow them to become overweight. The next time those big brown eyes say, 'Can I please have a treat,' think very carefully first. In most cases, your answer should be 'No, and I'm doing this for your own good,' and it will be absolutely true.

Treatment of Obesity

The only way to lose weight is to eat less and exercise more! Unfortunately it is not always as simple as that. There are a number of medical and psychological issues that make weight loss more challenging than simply reducing the amount of food that a pet eats. There are a number of approaches that can help you get your pet down to an ideal weight.

1. Ban feeding table scraps. It may seem a waste to throw out uneaten food but your dog is not a compost bin! Feed the worms instead! The reality is you cannot control your pet's energy intake if you feed tit-bits and scraps. One small piece of toast to a small dog can be the equivalent of a hamburger to us.

Increased surgical and anaesthetic risk

The effects of obesity on the heart and lungs have serious ramifications during anaesthesia. Cardiac arrest (heart stops) and poor circulation of oxygenated blood to the tissues can occur.

Many of the anaesthetics are taken up by fat, so an overweight animal will take longer to come out of anaesthesia because the anaesthetic must be removed from the fat by the body. In addition, many anaesthetics are broken down by the liver. A fatty liver may not be as efficient at breaking down anaesthetics and other drugs, so again, recovery may be delayed.

The increased fat in the tissues makes surgery more difficult. Basically it is harder to find or get at what you are looking for. The fat obscures the surgical area. For example, in abdominal surgery in an obese dog, there may be literally inches of fat between where the skin incision is made and the organ you need to work on, such as the urinary bladder. This makes the surgery technically more difficult and the procedure will also take longer, which again increases the anaesthetic risk.

Digestive disorders

An overweight dog has an increased risk of developing constipation and may also have more problems with intestinal gas and flatulence which is not pleasant for the dog or the owner.

Decreased immune function

Obesity in the dog is associated with decreased resistance to viral and bacterial infections. Canine distemper and *Salmonella* infections, especially, seem to be more severe in dogs that are overweight. The exact cause(s) of this lowered resistance to disease in obese dogs is unknown.



Skin and hair coat problems

The risks of skin and hair coat diseases are increased in dogs that are overweight. The skin forms more and different types of oils.

- Glomerulonephritis: This is an inflammatory disease that damages the blood vessels in the kidneys through which blood is filtered.
- Interstitial nephritis: This occurs when tissue in the kidney is destroyed by a disease process that causes scarring of the kidneys and/or a reduction in size. It is the most common cause of kidney failure but also can be an end result of other disease processes.
- High blood pressure is a result of CRI but also contributes to further kidney damage.
- Tumours in the kidney.

What are the symptoms of chronic kidney disease?

If you suspect your pet may have this problem, seek treatment as soon as possible from your veterinarian.

The following can be symptoms of kidney disease.

- decreased appetite and/or weight loss
- increased thirst and/or urination
- lethargy
- vomiting
- bad breath
- high blood pressure
- joint pain



How can you help minimize the chances of kidney disease?

The following measures can at least help minimize the risk of kidney disease, although they will not remove the risk entirely, since some of the factors are genetic and/or disease related.

- Feed a diet that is lower in protein, phosphorous, and salt and higher in carbohydrates and fat. This is because carbohydrates and fat are excreted via non-kidney routes
- Give your cat plenty of clean fresh water each day

- Notice your cat's normal behaviour patterns so you are more likely to recognize things like urethra blockages and infections which can damage the kidneys
- Keep toxic substances away from your cat (e.g. lily plants)
- Make sure your cat has 6 monthly checkups and is current on vaccinations. A thorough check up is especially important for older cats (greater than 8 or 9 years old).

What do you do if you suspect your cat has kidney problems?

Take your cat to a veterinarian immediately.

How is kidney disease diagnosed?

If kidney problems are suspected (e.g. symptoms listed above), the veterinarian may do one or a combination of the following:

- Take blood or urine samples
- If BUN (blood levels of urea nitrogen) and creatinine levels are high, the kidneys aren't filtering properly
- A complete urinalysis can indicate the extent of kidney damage and whether a kidney infection is present
- X-rays can also indicate kidney abnormalities and even kidney stones

What is the treatment for chronic kidney disease?

The treatment for chronic kidney disease can vary, depending on the type of kidney disease and the extent of the damage to the kidneys. Since often there is no cure, treatment centres on controlling the progression of the disease. Consequently, the earlier it is diagnosed, the better chance that treatment can improve your cat's condition and extend its life.

- Fluid therapy may be used to restore the electrolyte and fluid balance in the patient
- A diet low in phosphorous and



Heart disease and increased blood pressure

As in people, overweight dogs tend to have increased blood pressure (hypertension). The heart has an increased work load since it must pump additional blood to excess tissues. This can lead to congestive heart failure.

Difficulty breathing

In overweight animals, the lungs can not function properly. The additional fat in the chest restricts the expansion of the lungs. The extra fat in the abdomen pushes against the diaphragm, which separates the abdominal cavity from the chest. This also results in less space in the chest for the lungs to expand on inspiration. To make matters worse, the increased quantity of tissue puts an increased demand on the lungs to supply oxygen. These changes are especially serious in dogs that may already have a respiratory disease.



Decreased stamina

Dogs that are overweight have less endurance and stamina. Carrying all that extra weight around takes a lot more work. The heart, muscles, and respiratory system are all asked to do more than they were designed for.

Heat intolerance

Fat is an excellent insulator, which is fine if you are a polar bear. But if you are an overweight dog in the heat of summer, the excess fat can make you miserable, and much less capable of regulating your body temperature.

Decreased liver function

The liver stores fat so when a dog is overweight, an increased amount of fat builds up in the liver. This is called hepatic lipidosis. This condition can result in decreased liver function.

Diabetes mellitus (sugar diabetes)

One of the most common complications of obesity in dogs is the development of diabetes mellitus (sugar diabetes). Obesity causes an increase in the secretion of insulin in response to the increased blood glucose level in the overweight dog. Insulin is also more in demand simply because there is a greater amount of tissue in an overweight dog. When requirements for insulin exceed the ability of the body to produce insulin, diabetes mellitus develops. If the need for insulin increases over a long period of time, the cells in the pancreas which produce insulin can actually 'burn out,' again resulting in diabetes.

Damage to joints, bones, and ligaments

Studies have suggested that approximately one-quarter of overweight dogs develop serious joint complications. The bones, joints, muscles, and associated tendons and ligaments all work together to give the dog smooth and efficient movement. If they are required to carry excess weight, they can start to become damaged. Arthritis can develop and the pain and joint changes associated with hip dysplasia can become markedly more severe.

Extra tension on joints caused by an increased weight load can also lead to damage of certain ligaments. Ligaments are tough, fibrous strands of tissue that hold one bone in proximity to another bone in joints. One of the ligaments in the knee, the anterior cruciate ligament, is very prone to strains or tears. If this ligament is torn, the knee becomes very unstable and the dog is reluctant to use it. Surgery must be done to stabilise the joint.

Certain breeds of dogs, such as Dachshunds are prone to develop intervertebral disc disease ('slipped disc'). Carrying extra weight increases the probability that they will develop this painful and sometimes debilitating condition.



containing moderate levels of highly digestible protein is recommended so that your cat's kidneys have less to filter

- ACE inhibitors are drugs that stop the body retaining too much fluid thus easing the load on the kidneys. They have been shown to significantly increase the length and quality of life in cats suffering from CRI.

What is the prognosis for animals with CRI?

Although kidney disease is irreversible, with proper management cats and dogs can live with a reasonable quality of life for some time. How long that is depends on the individual case but can range from months to years.

3 Canine Cognitive Dysfunction Syndrome

Like humans, old dogs and cats can suffer from senility and Alzheimer's Disease-like symptoms. Dogs particularly seem to be affected and the condition has been termed Canine Cognitive Dysfunction Syndrome (CDS). Researchers believe CDS is caused by physical and chemical changes that affect the brain function in older dogs. Dogs with CDS may show signs of confusion and/or various other behavioural changes that are not a normal part of aging.

This confusion can lead to a life of lonely isolation, separated from family members who have come to cherish their older dog's companionship. This can be as hard on family members as it is on the dog. Pet owners often describe their dogs as less responsive, forgetful or confused.

Signs of CDS

The following are symptoms of CDS and are not necessarily just signs your dog is “getting old”.

If your dog is exhibiting

- Altered interaction with family members
- Decreased greeting behaviour
- Disorientation such as staring at walls, standing at the wrong side of doors
- Loss of housetraining
- Change in sleep/wake cycle
- Change in activity: increased pacing, decreased purposeful activity

Treatment of CDS

1. Mental stimulation. It is important to maintain mental stimulation throughout a dog’s life – the more they use their brain, the more alert they will remain. “Use it or lose it” as they say. Old dogs *can* be taught new tricks and at the very least, they will benefit from reinforcing previously learned commands. Playing games and taking dogs for different walks will also maintain mental stimulation.



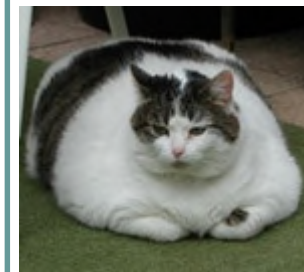
2. Diet. There is a prescription diet available (Hills b/d) which is formulated to improve brain metabolism and has been clinically proven to be effective in many cases. If your dog is not on another prescription diet and shows signs of CDS, then feeding Hills b/d would be a great way to slow down the

progression of the disease. The food needs to be fed for at least 6 weeks to evaluate the response.

3. Drugs. There are a number of drugs available to help reverse the effects of CDS. One group of drugs acts by increasing blood flow to the brain, while the other drug acts on neurotransmitters in the brain (those who have seen the film *Awakenings* starring Robin Williams will remember the amazing effect that this drug can have).

Many owners are reluctant to put their old pets on medication for senility as they see it as a natural part of growing old. Although some decline in mental function is to be expected, CDS is a disease process that interferes with an animal’s quality of life and if we can maintain their quality of life then we are really doing the pet a favour by medicating it.

4. Obesity



Like people, a high proportion of Australian dogs and cats are overweight. A recent study in Australia revealed that over 33% of dogs are overweight (>15% over ideal weight) and nearly 8% are classified as obese (>30% over ideal weight). The results for cats are similar.

As in people, dogs carrying extra kilos of weight place extra demands on virtually all the organs of their bodies. When we overload these organs, disease and sometimes death are the consequences. The health risks to overweight dogs are serious and every dog owner should be aware of them. The more common consequences of obesity in dogs are discussed below.