

# **GERIATRIC ANIMALS: BEHAVIOUR PROBLEMS IN CATS AND DOGS**

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Aging is a physiological process for every creature and involves internal changes in organ structure and metabolic processes including those in the brain. How senior pets are affected by these natural aging processes depends on many factors throughout their lives, such as lifestyle, nutrition, their emotional environment, disease and traumas, etc. Senior pets become especially increasingly sensitive to the secondary effects of their external physical environment such as temperature extremes of cold or hot, or humidity on their metabolism and strength of their immune systems.

## **Emotional and physical environment.**

Lifestyle has an important impact on health in both people and animals. Pets who live in households where owners are relatively stress free, and where they receive proper nutrition, are cared and loved, and have all their emotional and environmental need met tend to live longer and healthier lives. But unfortunate pets who live in a more stressful home environment, perhaps where owners are arguing constantly, or where health and emotional care is inadequate, or if they are fed with poor quality or insufficient food or housed without appropriate seasonal climate control, have a higher risk of becoming ill and aging faster.

Cortisol, which is produced by suprarenal glands, is involved here as one of major the so-called 'stress hormones'. During periods of high physiological arousal associated with stressful situations, cortisol is released into bloodstream in a high amounts and, along with adrenalin, another suprarenal hormone, is responsible for promoting the 4F's (fight, flight, freeze or 'fiddle about' (appease/deflect/negotiate) response range to help the animal cope and survive. If the animal is under constant stress, large amounts of cortisol are released into the blood, and can cause damage to tissues and major organs such as the heart, although the brain is often the most affected organ. This is partially due to the effect of cortisol release inhibiting blood

sugar utilisation by the main brain memory centre, the hippocampus. If there is not enough glucose in the hippocampus, it may lack the energy to memorise events and experiences properly. Cortisol excess can also block brain neurotransmitter activity, disabling proper communication between neurones causing chaos in the brain and disruption of normal behaviour. An excess of cortisol can also kill neurones by causing excessive calcium intake, which in turn produces a super abundance of free radicals, which kills them from the inside. Many other neurotransmitters can also be affected, such as acetylcholine, noradrenalin, dopamine, serotonin, L-glutamate, gamma-aminobutyric acid (GABA) and endorphins in different degrees, and high levels of stress hormones can also produce unwanted secondary effects elsewhere, degenerating both the heart and circulatory system, as well as degrading the potency of the immune system. In physical terms, all of these disorders can lead to problems such as cognitive and memory disorders, sensory and motor disorders and, in turn, cause many and variable unwanted behaviour changes.

### **Diseases and the Immune System.**

The aging process has major effects on the immune function of the body and pets and people will remain alive as long as their genes determine their immune system remains in good shape. As soon as immune function is impaired, the survival of the body is in jeopardy from any harmful infections and disease.

### **Nutrition**

Brain cells, and whole Central Nervous System, require huge quantities of good quality nutrients for functioning properly. Hence, diet is a key factor in the brain aging processes, and thus on the timing of the appearance of any unwanted behaviours associated with aging. An underfed pet, both in terms of diet quality and quantity, can suffer neuronal damage, in respect of neurone cell membrane metabolism and dendrite function, causing improper neural transmission, impaired neurotransmitter metabolism, storage and recycling, and worse still, synaptic loosening, neuronal death and inactivity, and associated loss of brain function and behavioural co-ordination. Inappropriate feeding can also lead to degenerative pathologies as chronic liver and kidney failure, heart disease, arthritis, irritable bowel disease, disc disease, obesity, etc, with behavioural disorders occurring as a result of these diseases as well. The senses of hearing, touch, smell, taste and visual acuity and cognitive disorders can all arise due to the early onset of senility catalysed by poor nutrition, and lead to many behavioural problems from ataxia and loss of movement co-ordination and training through to breakdowns in house-training.

Proper nutrition throughout life helps ensure that the aging process proceeds as healthily as possible. If since birth animals are fed with high quality food appropriate to their age and lifestyle they will tend to have a strong immune system, and less pre-disposition to becoming ill, and of course their Golden years will be healthier and more active than those fed poor quality, inadequate or improper diets. Most of the modern day quality pet food manufacturers produce a lifestyle range of products that

ensure that the needs of the animal can be met, and this is especially important in old age from a physiological and behavioural point of view.

Bear in mind that eating time is a hard task for them, especially when olfaction is poor, and they cannot smell foods properly. Also is necessary to consider that periodontal disease and simple gingivitis can make them difficult and painful to grab and chew the meal. In such cases, add strong smell foods, as garlic, fish or cheese, can help them to get interested on food. Besides to give them moistened food on instead dry food, so chewing is easier to them.

## **Sleep**

According to human research, melatonin production decreases as the body ages. Melatonin is a hormone produced by pineal gland and is responsible for inducing sleep, and for ensuring that we and our pets rest properly during sleep time. Its production is stimulated when light levels decrease during the evening. When melatonin is deficient, its restorative and antioxidant effects during sleep are impaired, and so both people and animals can then experience have uncomfortable, short and unrestorative nights and so need more sleep during day. Cortisol levels also influence melatonin production, as does diet because melatonin is produced by the body from serotonin which depends on an adequate dietary intake of tryptophan.

It is therefore highly advisable to allow pets an appropriate opportunity for sleep and rest both during night and day, although, daytime sleep has restorative effect that the night sleep, mainly due to the fact that melatonin is not produced in the daytime. Unfortunately for older animals and people, due to naturally reduced levels of melatonin release at night, night sleep can be restless, and they may wake up several times, beginning pacing and vocalising. This is mainly because they can't reach the 3<sup>rd</sup> and 4<sup>th</sup> sleep stages, the deep restorative stages, so easily and so they spend more time in the less beneficial REM stage. This is particularly found with aging cats, for whom attention to diet and stimulation of activity during the day, and provision of a very comfortable night-time bed becomes increasingly important if owners are not to be woken by their cat's activity! It is also important that owners of older cats try not to respond by getting up and comforting the older cat when it first shows this nocturnal activity unless there are indications of poor health, or they will simply reinforce the behaviour and increase their cat's dependence on them for stimulation during the night.

## **Understanding old pets**

In physical terms, disorders associated with poor nutrition, poor sleep and immune system challenge can all lead to diseases as cognitive and memory disorders, sensory and motor disorders, in old age causing a great range of unwanted behaviours. Senility leads to cognitive disorders, which, in turn, promote insecurity in particular for the older dog and cat and lack or awareness of what to do to resolve

challenges and conflicts. For example, many older pets find it very hard to cope with life if they are temporarily isolated from the owners in the day or night and can become anxious and distressed. This may present as pacing, vocalising, chewing household furniture, and loss of bowel and bladder control. There may be also be a return of very puppy like behaviour in older dogs in an attempt to attract and keep the owner's attention and prevent separation.

House training accidents are also common in older pets as bowel and bladder sphincter control deteriorates and so aging dogs will need to be walked more frequently and more litter boxes may be needed by older cats. Many older bitches, especially if spayed, may leak urine when asleep or relaxed due to loss of oestrogen influence in maintaining bladder sphincter tightness. Frequent short exercise outdoors and opportunity to urinate will help keep their bladders as empty as possible, and in severe cases of overnight involuntary urination diapering the dog can help. Some drugs are available to help increase bladder urinary sphincter tone, those without anticholinergic effects are probably preferred for older bitches, but a low dose of synthetic oestrogen (eg 1m stilbestrol per dog per week) can also resolve the problem for many. Litter boxes and beds will also need to be placed in easily accessible places if cats become physically less able to move around easily or jump because of arthritis etc. and may also need to be positioned in very obvious places if they begin to forget where they used to be found.

For dogs, aging as a result of stress induced cortisol effects and poor diet or failing digestive and absorption capabilities can result in memory loss and lead to them forgetting learned tasks and elements of even well-established obedience training, So they will require more direction, more on-leash walking perhaps to keep them safe outdoors and maybe louder signals if their hearing becomes impaired. But beware! Many older dogs, like older people, can learn to become selectively deaf in their old age to their owner's requests in order to avoid having to move or do some things that they would prefer to avoid!

Sensory impairment also occurs with old age and the world around an older cat or dog can become darker and blurred as eyesight degenerates, more silent as hearing fades, and less fragrant because of increasing olfactory dysfunction. Hence pets, as well as old people, become slower to react to changes in their environment and aware that they are missing out on information about their environment, may begin losing their self-confidence. Providing older dogs with a secure indoor kennel can be helpful, so that they can retreat to an enclosed area where less change can occur, and they can rely on their sense of touch more and so feel more secure when they are inside. This should be placed close to owner's favourite paces at home such as in the living - dinning room, kitchen or bedroom and perhaps moved around to accommodate the pet's activity patterns. Cats can also benefit from a secure more enclosed resting box and, if they are able still to climb, or easy access can be provided, this is best positioned off the floor as cats feel safer higher up as climbing

animals. However, while such dens afford more opportunity for security and undisturbed sleep in old age, it is important that owners do not simply allow their pets to hide and sleep away their remaining years but encourage them out to interact and exercise as much as possible within their physical limitations.

With fading eyesight and motor co-ordination it is very important to avoid rearranging the home furniture so that pets can walk safely inside home, knowing where the furniture and familiar objects are as they move around by using their memory as much as sensory input. An older pet suffering sensory impairment may not recognise his owners immediately on meeting as in earlier years, but this does not always mean he has forgotten them, but simply that he is not able to see, hear and smell them as quickly as he used to. Owners may need help to distinguish between slower response time and total loss of memory due to senility. It can be useful in such cases that the owner becomes louder in his initial greetings and day to day interactions with their pet, perhaps clapping their hands first to announce their arrival before touching and talking with their pet at close quarters to avoid frightening him.

Most importantly, older pets need a level of stimulation and wakefulness appropriate to their physical capabilities to keep their brain active and functioning to the best of its ability. This can be provided regularly through physical exercise, such as walks outdoors for dogs and games, especially chase games as these demand sensory and motor co-ordination, and those using different kind of novel toys, sounds, etc for both dogs and cats. Presenting a range of novel toys and objects will also maintain the pet's interests and sensory investigation skills. Such attention to environmental enrichment helps prevent the sensory isolation that leads to neuronal 'apathy', and so is very necessary to maintain an active brain. Forms of tactile stimulation such as regular stroking, massage and Tellington Touch are also essential for maintaining sensory and muscular function in older pets.

Company is a most important form of stimulation required for an older pet, to keep him feeling close to the family and stimulated and involved socially. As they age they may need to be reassured by owners increasingly, so it is important to talk with them more, touch, exercise and react with them during their often reduced waking hours. While good levels of physical and mental stimulation are vital for the welfare of older pets and in preventing behaviour problems associated with senility, it is important not to frustrate them with over frequent demands to play and exercise, nor to change routines of feeding, play, exercise etc or their physical environment too suddenly or without appropriate supervision. As ever, it is a question of balance related to a good assessment of exactly what any animal is capable of for his age and abilities.

Older pets commonly suffer from painful or uncomfortable physical conditions. Hyperthyroid cats can vocalise far more frequently than normal, and show levels of restlessness, agitation and weight loss in old age in spite of having an excessive appetite, due to excessive production of thyroid hormones. Controlling the thyroid

imbalance should diminish or resolve these behavioural and physical signs. Older cats and dogs can often suffer from arthritis, artrosis, hip displasia, cancer and other painful disorders such as disc disease, spondylosis, wobbler syndrome, etc. Such pets may become aggressive and or intolerant of being approached, petted or handled due to pain, or try to isolate themselves to avoid being touched and hurt in social interactions with people or other pets. Alternatively they may stay lying down for long periods because movement causes them more pain, and all such cases, the veterinary surgeon will be able to advise about managing the cause of the pain and how far the pet should be encouraged to be more active. In some such cases acupuncture has been found be highly beneficial in managing pain, so improving the pet's welfare and strengthening their inner reserves of energy. Nutraceuticals such as Methylsulphonylmethane (MSM), glucosamine and collagen supplies have also showed their effectiveness in such geriatric patients. Being overweight only adds to the discomfort or pain of such conditions and so it is especially important that older pets are maintained at their correct weigh, again, the veterinary surgeon will be able to advise about suitable weight loss programmes and diets for older pets.

Much of what constitutes good care for older pets in terms of physical and psychological needs revolves around thinking ahead and maximising the cat or dog's abilities to remain active, reactive and competent in all areas of life as they age, expecting that certain behavioural changes will occur and being prepared to change husbandry practices early on. Older animals do need more care and attention in their often reduced waking hours and perhaps more help from veterinarians and behaviourists when age related problems arise, but they will repay this with the love, humour and wisdom that only age can bring – and surely they deserve our extra care after devoting their youth and adulthood to us!