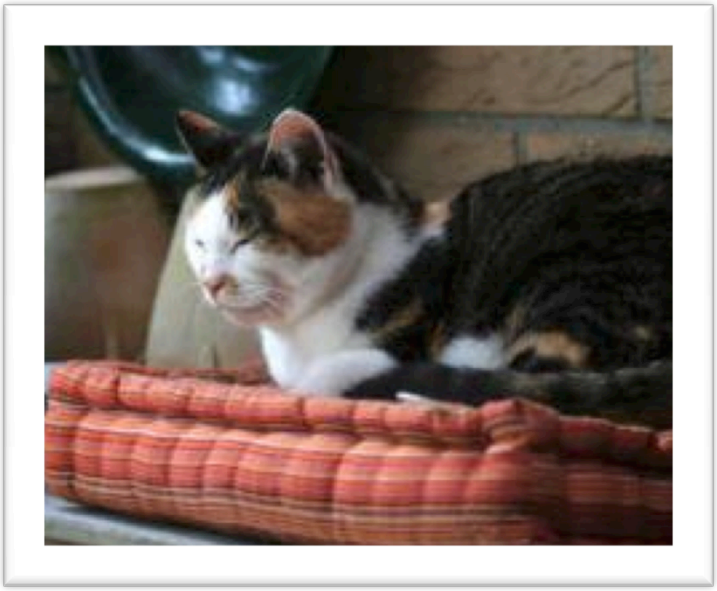
Geriatric Cats



Whether you call these patients geriatric or (as some feline practitioners insist) "mature," special considerations are required in evaluating, examining, hospitalizing, and generally caring for older felines. However, veterinarians must understand that old age is not a disease, it is a stage of life.

None of us would be happy with our physicians if we went to their offices complaining about an ache or pain, lump or bump and were told, "You are just getting old, and there's nothing we can do about that." Like humans, cats do develop problems associated with advancing age. We veterinarians must be aware of these common problems so that we can recognize and treat them specifically and enhance our feline patients' longevity as well as their health in their "golden years." The objectives of a managed program of feline geriatric health care include recognizing and controlling health risk factors, detecting preclinical disease, correcting or delaying the progression of existing disorders, and improving or restoring residual function.

Aging is obviously time dependent; however, various tissues age at different rates, depending on their cell and organ type. Some types of cells (e.g., nerve tissue) have little or slow regenerative capacity. Other tissues (e.g., **epithelial cells**) generally have a good regenerative response. Kidneys have a great reserve capacity, as does the liver. **Myocardium** is much less forgiving of injury. Environmental effects, including husbandry (diet, housing, medical care), also have a great impact on longevity. **Feral** tomcats have an average life span of three years, whereas castrated male house cats can live well into their late teens or early 20s with proper care.

Genetics may also play a role in feline longevity, although this has not been well documented. Some highly inbred cats may be more likely to have heritable defects in organ development or function or immune system defects that may limit longevity.

Age comparison

Owners often ask us to compare "cat years" to "human years." A figure that is commonly used is seven cat years for each calendar year; however, this rule of thumb is not completely accurate. Feline development through puberty to young adulthood is accomplished over a period of about 18 to 24 months, rather than 21 years as in humans. Thus, the cat's first calendar year is more like 16 cat years, and the cat's second calendar year is more like five to seven cat years (up to an equivalent age of 21 to 23 years in humans). After that, add about four cat years for each calendar year of cat life. Thus, an eight-year-old cat is like a 46-year-old person. A 10-year-old cat would be 54, a 15-year-old cat 74, and a 20-year-old cat would be 94 cat years of age. Experts differ as to when one would consider an aging cat to be "geriatric," but you can select your own cut-off based on this comparison to the equivalent age in humans.

Morbidity and mortality

The feline patient population is getting older as advances in animal health care and nutrition as well as lifestyle changes (more indoor-only cats) have enhanced longevity. Surveys indicate that the segment of "geriatric" patients in most practices approaches 10% to 20% of the practice population. It is likely that this "graying" of the feline patient population will continue.

The most common causes of death in aged cats include renal failure, cancer, and infectious disease. In contrast, the most frequent causes of death among old dogs are cardiac failure, cancer, and renal failure.

Common chronic diseases of aged cats include hyperthyroidism, inflammatory bowel disease, renal insufficiency, diabetes mellitus, dental disease, and feline immunodeficiency virus (FIV) infection. All of these recognized disease conditions provide opportunities for veterinary management that will improve the health of affected patients and improve the quality of life as well as prolonging life.

Evaluation

Each veterinarian and practice should develop a logical approach to evaluation of the geriatric cat so that abnormalities can be detected in an early, treatable stage. In addition to being consistent with the practice philosophy and appropriate health care objectives, each geriatric-care program should be evaluated - from the cat owner's perspective - to be affordable, within the owner's ability to comply with recommendations, and consistent with the owner's philosophy of the level of care they want for their pet.

Each clinician should decide whether a thorough annual examination and evaluation is sufficient or if it would be best to recommend examination as frequently as every six months for apparently healthy mature feline patients. Some feline practitioners recommend blood pressure evaluation as part of this examination; however, obtaining accurate measurements of feline blood pressure is often problematic. I do not believe that essential hypertension (hypertension without underlying disease, such as renal insufficiency or hyperthyroidism) is sufficiently common in cats to warrant this additional patient stress and owner expense. For patients that are already receiving medical care for chronic problems, reevaluation should obviously be scheduled as indicated by the specific condition and the patient's response to management.

If you plan to include laboratory evaluation as part of the routine yearly evaluation for healthy geriatric patients, the following are recommended:

- Complete blood count
- **Serum biochemistry profile** with electrolytes
- Complete urinalysis (collected by **cystocentesis** because bacterial urinary tract infection, although uncommon in cats, is more likely in older patients)
- **Serum total thyroxine**

An alternative to this complete laboratory evaluation might include the following:

- Urine specific gravity and dipstick chemistry evaluation
- Packed cell volume and total protein
- **Blood urea nitrogen** and creatinine
- **Alanine aminotransferase**, **serum alkaline phosphatase**, and **g-glutamyl transferase**

Other tests should be considered for selected patients. Feline leukemia virus (FeLV) antigen and FIV antibody tests are always recommended for sick patients and should be considered for healthy animals that are outdoor or indoor/outdoor pets with possible exposure to these retroviruses. Fecal examination for parasites may also be more important for cats with outdoor exposure. **Thoracic radiographs** and further cardiac evaluation (electrocardiography, echocardiography) may be recommended for cats with apparent **pulmonary signs**, **cardiac murmurs**, or **arrhythmia**.

Management principles

Older animals may have some age-related deterioration of the immune system that makes them more susceptible to infectious diseases or allows infectious diseases (e.g., FIP, FIV) that have been kept in check by the immune system to cause clinical signs. However, routine yearly revaccination policies are currently undergoing reexamination in light of concerns about **vaccine-associated sarcoma** in cats. In addition, new information about the duration of immunity actually provided by our biologic products is becoming available.

At present, most progressive practitioners recognize that yearly revaccination recommendations are not based on good science. Consequently, they have extended revaccination intervals for adult cats. In addition, we must be selective about which vaccines are really necessary for each particular patient. Just because a vaccine is available does not mean that it should be used in every patient - regardless of age, health status, and environment.

Older animals (like older humans) tend to get less exercise as they age. This is particularly true of cats, which generally have a more sedentary lifestyle than dogs have. Diminished exercise reduces muscle tone and bone and joint strength and causes a tendency toward obesity.

Geriatric animals also have a decreased thirst response. Therefore, they are more likely to become dehydrated with illness or even during routine hospitalization or boarding. Dehydration can obviously compromise already marginally functioning body organs and compound deficiencies in renal function.

Taste sensation is reduced in older cats. This can lead to anorexia - again, often associated with illness or a change in surroundings. Feeding highly aromatic diets and warming food to body temperature before serving improves palatability.

Cataracts are uncommon in cats, but some degree of visual impairment occurs with age-associated **nuclear sclerosis** and **retinal degeneration**. Hearing loss is usually gradual and may not be noticed by owners until the cat becomes completely deaf. Both visually- and hearing-impaired cats can and often do function quite normally in a protected environment, such as the home. They should not be allowed outdoors unsupervised, however, because they would be at risk for potentially fatal encounters with such environmental hazards as dogs and motor vehicles.

Older cats typically spend less time grooming. Also, the skin and haircoat tend to become drier with age. Owners should be advised to brush mature cats frequently, thus helping to remove debris and improve the distribution of natural oils on the skin and in the haircoat. If necessary, the cat can be bathed with mild hypoallergenic, nondrying shampoo. Longhaired cats may have more problems with hair mats as they age, and the haircoat may need to be clipped to make it easier for the owner to groom the cat.

Musculoskeletal disease (e.g., degenerative joint disease, **osteoarthritis**) is generally less severe in cats than in dogs because of cats' light weight and limber physique; however, it is surprising how often degenerative joint disease is discovered as an incidental finding on feline radiographs. Sometimes, degenerative joint disease may be a cause of the cat's "slowing down with age." In these cases, treatment may markedly improve the cat's mobility and general well being.

Oral cavity disorders (including periodontitis, gingivitis, **stomatitis**, dental disease, oral ulcers, or oral cavity tumors) are often overlooked as the cause of significant morbidity in geriatric cats. It is remarkable how often appropriate treatment for these oral problems leads to a marked improvement in quality of life and activity. The common signs of oral cavity disease include inappetence, weight loss, halitosis, chattering teeth, abnormal chewing and/or swallowing behavior, decreased grooming, or nasal discharge (usually unilateral). Infection often accompanies oral cavity disease and may result in intermittent bacteremia or septicemia. This may in turn lead to disorders in other body systems (including hyperglobulinemia due to immune stimulation, immune-complex renal disease, chronic interstitial nephritis, hepatitis, and possibly cardiovascular disease).

Apparent senility does occur in cats. Associated behavior changes include confusion, aimless wandering around the house, or getting "stuck" in a corner or under a piece of furniture - the cat is apparently unable to figure out how to get out. In others, the changes may include aggression or changes in elimination behavior (usually breaks in housetraining). It is very important to perform a thorough physical examination and laboratory workup to eliminate possible medical problems (e.g., primary central nervous system disease or neoplasia, hepatoencephalopathy, or urinary tract infection) before assuming that these changes are due to senile dementia.

Impaired thermoregulation is another central nervous system change that may occur in older cats. Affected animals may be more heat or cold seeking, depending on the season and ambient temperature. Body temperature must be monitored closely during and following anesthetic procedures and if the animal is hospitalized.

Geriatric diets

There are differences of opinion as to whether a specific, specialized diet is necessary or recommended for geriatric cats. Clearly, animals with specific medical problems that may be helped by special diets (e.g., renal disease (restricted protein and phosphorus), inflammatory bowel disease (select protein, limited antigen), diabetes mellitus (high fiber) should be fed the most appropriate diet for their condition. Acidifying diets are not recommended unless there is a documented medical reason for their use. But what about the apparently healthy geriatric patient?

The best diets for older patients should be well balanced, nutritionally complete, highly palatable, highly digestible, and replete with potassium and taurine. Excesses of mineral and protein should be avoided. Several commercially available products fulfill these criteria. Supplements should not be necessary with these products unless specific deficiencies (e.g., hypokalemia) are detected.

Some people routinely feed older cats restricted-protein diets (i.e., those designed for animals with renal insufficiency) in the belief that these diets will prevent or slow the development of renal failure. Recent studies suggest, however, that lower-protein diets do not protect the kidneys and are not beneficial until renal insufficiency has developed.

Drug therapy

In addition to the normal species-related vagaries in drug handling, age-related changes affect the absorption, distribution, and metabolism of various drugs in geriatric cats. Decreased gastric secretion of hydrochloric acid may affect the absorption of some drugs that require an acid environment. Decreased intestinal blood flow may reduce the amount of drug absorbed from the intestinal tract. Faster gastric emptying (decreased gastric emptying time) can reduce the amount of contact time for some drugs absorbed from the stomach.

Changes in body mass affect drug distribution. As an animal ages, the percentage of body fat tends to increase and lean body mass tends to decrease. Consequently, dose adjustments may be required if a drug dose is based on lean body mass. Changes in serum proteins and protein binding may affect drug availability and elimination kinetics.

Decreased cardiac output increases circulation time, may reduce blood flow to certain organs or tissues, and further alters drug metabolism or pharmacokinetics. Reductions in liver mass and function can decrease the rate of metabolic conversion of a drug to either active or inactive metabolites. Alterations in renal blood flow and glomerular filtration rate can reduce the rate of clearance of unmodified drug or metabolites from the body. The hepatic and renal changes generally result in a decrease in first-pass drug metabolism and tend to result in higher drug levels in the body. Finally, because older patients are likely to have more than one problem as they age, veterinarians need to be aware of the effects of polypharmacy and the potential for adverse drug interactions.

Euthanasia

Despite the veterinarian's best efforts, there often comes a time when the veterinarian must help the owner make the difficult decision to end the patient's life. This is a heavy responsibility, and none of us should take it lightly. In addition to gently alleviating the patient's suffering, we must be sensitive to the bond between the pet and its owner. If possible, euthanasia should be performed after regular business hours, when the clinic is quiet and time is available to perform the procedure calmly, compassionately, and gently. Our ability to communicate with the owner and help them through this difficult time is very important.

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