



Caring for Senior Pets

There is a special joy in having a pet. Pets, like people, are living longer than ever before, and many are reaching well into their senior years. As pet owners, we hope that our companion animals will be part of our lives for many, many years. Understanding the unique health issues and care needs of older pets will help them enjoy healthier and happier lives during their golden years.

All animals, which include humans, go through a series of “life stages.” The first life stage is puberty, which is around 6-12 months in dogs and cats, and around 13 years in humans. The second significant life stage is the reproductive years, which for humans is from puberty to about 40 years and for cats and dogs from puberty to 6-8 years of age. The final life stage, when the effects of aging start to become most evident, is around 9-10 years for cats and around 60 years for people.

The average life span for most humans is in the mid-80s, while for cats it is 16-18 years. The life span for dogs is among the most variable of all animal species, with large dogs often living to 12-14 years, and small dogs often living to 16-18 years and beyond. There are exceptional examples in all species: the oldest living cat was reported to be 38 years old, the oldest dog was 26 years old and the oldest person was 122 years old.

This, and upcoming issues of the *CAAH Update*, will feature information on topics related to aging (when the genes we were born with, the genes that have been changed as a result of life's experiences and exposures, and other unforeseen events in life begin to collectively manifest themselves).

This issue features an article (starting on the next page) about one of the most common afflictions of aging—arthritis.

The most common form of arthritis is due to the wear and tear on joints. This form of arthritis is also known as osteoarthritis, but more correctly named degenerative joint disease. While the disease occurs often in humans, dogs and cats, humans and dogs suffer from it the most. Cats can tolerate an amazing amount of joint disease with a minimum loss of function. They have the ability to maintain their normal activities in spite of it. Dogs are perhaps the most variable of all species in the age onset and intensity of their degenerative joint disease. Large breeds develop degenerative joint disease earlier and with greater severity than do smaller breeds. Various dog breeds have also been bred for certain characteristics that can accelerate joint destruction.

We hope that you will find this issue informative in helping your pet enjoy a healthy and happy life.

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Happy and Active for Life: JOINT, MUSCLE, BONE CONDITIONS AND OSTEOARTHRITIS

By Dr. Kei Hayashi

Maintaining an active lifestyle is essential to enjoying a good quality of life for many dogs and cats. Companion animals are generally living longer, thanks to the advancement of veterinary medical care. There are some basic questions to consider: “Are they happy?” “Can they do what they enjoy?” Orthopedic conditions involving joints, muscles and bones tend to increase with an animal’s age. Aging is not a disease, but a process that may result in pain and decreased mobility, due to an age-related condition called “osteoarthritis.”

Osteoarthritis, or degenerative joint disease, is estimated to be present in one in five adult dogs worldwide (roughly 10 to 12 million dogs in the United States). While there are many initiating causes, osteoarthritis is an irreversible process that often results in clinical syndromes of the joint (i.e., lameness, pain and decreased activity) that affects quality of life.

What is Osteoarthritis?

Osteoarthritis is a common joint disorder, which is due to aging and wear and tear on a joint. Although initiated by multiple factors, including genetic, developmental, metabolic and traumatic factors, osteoarthritic diseases involve all of the tissues of the joint (cartilages, ligaments, bones, tendons, muscles and nerves). When clinically evident, osteoarthritic diseases are characterized by joint pain, tenderness, movement limitation, crepitus (crackling or popping sounds and sensations), occasional swelling, and variable degrees of inflammation without systemic effects.

- Osteoarthritis is a syndrome affecting joints, characterized by pain and dysfunction.
- It is more often seen in older dogs and cats. Family history may be useful to evaluate genetic predisposition.
- Common findings include muscle atrophy of the affected limb, decreased range of motion, joint effusion/swelling, pain (or crepitation) during flexion and extension.



Osteoarthritis is estimated to be present in one in five adult dogs worldwide (roughly 10 to 12 million dogs in the United States).

Clinical Signs

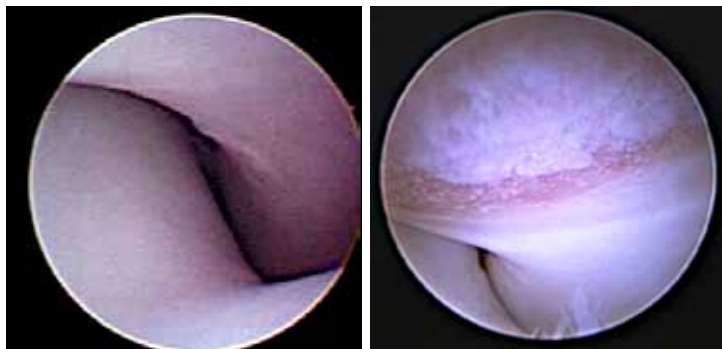
Clinical signs associated with osteoarthritis include stiffness, difficulty to rise, reluctance to exercise, lameness, preference to lie down rather than to stand, restlessness, behavioral changes, anorexia and insomnia. The most common clinical sign is joint pain and associated lameness that may be acute or chronic. Chronic pain may be difficult to recognize, as it is often subtle in the onset. Cats with osteoarthritis may have a history of reduced appetite, weight loss, reluctance to move, or failure to self-groom.

Diagnosis

Osteoarthritis occurs in varying degrees of severity and is often difficult to diagnose. Diagnosis of osteoarthritis requires a comprehensive evaluation that includes history, physical examination, radiography and arthroscopy. Most importantly, other potential joint diseases (such as cancer, immune-mediated disease and infection) need to be carefully ruled out.

General Strategy

Trauma, obesity and aging are important contributing factors in the development and progression of osteoarthritis in dogs and cats. In dogs, identification of predisposing conditions to osteoarthritis (congenital conditions such as elbow dysplasia, hip dysplasia and patellar luxation, or acquired conditions such as cranial cruciate ligament rupture, traumatic luxation and fracture) is particularly important.



Arthroscopic photos showing healthy cartilage (left) and damaged cartilage in a canine elbow with osteoarthritis (right), exhibiting a worn surface.

Management

Weight control and exercise are essential in managing osteoarthritis. Regular, low-impact exercise is beneficial in maintaining range of motion and muscle mass, thus improving limb function.

Many nutritional supplements are intended to reduce inflammation and pain, although there is no scientific evidence that these products help treat osteoarthritis in dogs and cats. Commonly used nutritional supplements are omega-3 fatty acids, glucosamine and chondroitin sulfate. Non-steroidal, anti-inflammatory drugs are widely used to control acute and chronic pain in veterinary patients. However, the risks in using these agents must be considered prior to their usage. Several other drugs have been recently tested for alleviation of chronic osteoarthritic pain. Their efficacy remains to be determined.

- Careful breeding is probably the most effective strategy to control certain types of secondary osteoarthritis (elbow dysplasia, hip dysplasia, patellar luxation).
- Surgery can minimize the destructive effect of the underlying disease on a joint.

Integrative Approach with Multimodal Therapy

Current interest is focusing on an integrative approach with multimodal options, including physical therapy, supportive devices, stem cell therapy, shock wave therapy and acupuncture.



Physical therapy and rehabilitation with aid from supportive devices can make a significant difference in the management of osteoarthritis (photo courtesy of Jackie Woelz).

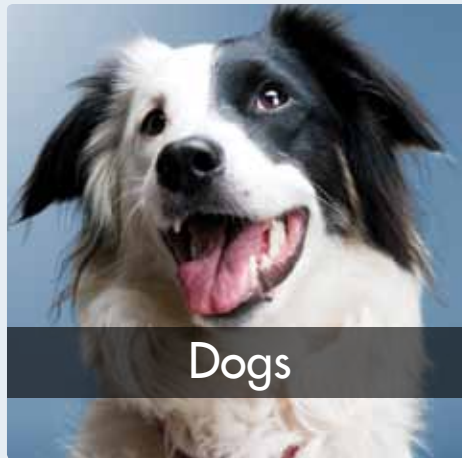


Stem cells can be harvested from fatty tissue, isolated in the lab, and injected back into osteoarthritic joints. Its efficacy remains to be critically evaluated.

– continued on page 4

CCAH Research Studies: your gifts benefitting animal health

A special thank you to all of our generous donors who have given gifts to support important research studies. Your gifts are helping to improve the health of companion animals. These are a few highlights of current research projects at the CCAH.



Identifying and analyzing immune cells associated with normal feline mouths (oral mucosa)

Dr. Frank Verstraete

Identifying genetic mutations causing various forms of hairlessness in cats

Dr. Leslie Lyons

Study to improve effectiveness of the FIV vaccine

Dr. Ellen Sparger

Multiple autoimmune diseases in Italian greyhounds—preliminary studies of genome-wide diversity associated within the dog leukocyte antigen (DLA)

Dr. Niels Pedersen

Study of ultrasound-guided nerve blocks of the canine legs

Dr. Peter Pascoe

Evaluating the most effective anesthetic dosage (of sevoflurane) for parrots

Dr. Scott Larsen

Evaluating wound healing and therapeutic agents to improve the health of reptiles

Dr. Joanne Paul-Murphy

For more information on **CCAH research studies**, visit www.vetmed.ucdavis.edu/CCAH/research

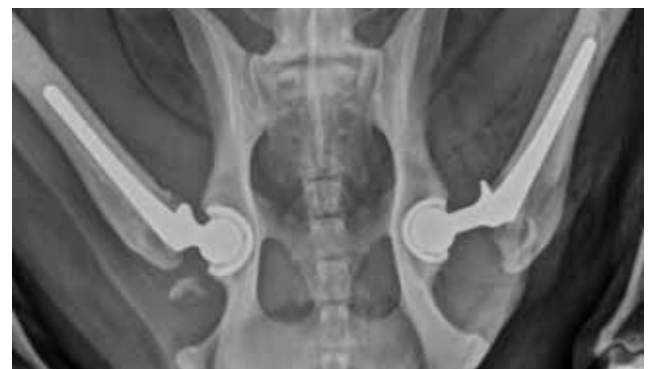
Happy and Active for Life *(continued)*

Surgical Options

Unfortunately, advanced osteoarthritis is not likely to respond fully to the earlier mentioned treatment options. Fortunately, several surgical options are available to eliminate pain and to improve normal function even in aging animals. Total hip replacement has been successfully employed in many dogs and few cats. Elbow replacement surgery is currently being tested.

Future Direction

Dr. Amy Kapatkin is leading multiple clinical studies in the UC Davis Veterinary Orthopedic Research Laboratory to evaluate the efficacy of these cutting-edge therapeutic options. 🐾



Total hip replacement surgery was performed on both hips in an 11 year-old Labrador Retriever. He is still functioning well as a hunting dog.

We gratefully acknowledge Friends of Companion Animals members for supporting the CCAH and advancing animal health and well-being. The following benefactors contributed \$1,000 or more from July 1, 2010 to June 30, 2011.

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Companion Animal Memorial Fund: *Heartfelt Giving*

Companion animals bring much joy to our lives and are dear members of the family. So when a pet passes away, the loss can be very difficult to endure.

Helping to bring comfort to those who have lost a beloved pet, the CCAH has partnered with veterinary clinics through the Companion Animal Memorial Fund program.

The program offers veterinarians a special way to express sympathy to a client by making a donation honoring a pet. The memories of pets live on through research studies, which the CAMF funds, to help find cures for diseases and conditions that cause pain and suffering among companion animals.

“As a veterinarian I am dedicated to helping animals live the best life possible for as long as humanely possible. The CCAH has achieved amazing advances in improving the quality and quantity of life for our dear furred and feathered friends, and the least I can do is honor my patients who have died with a gift that will contribute to the important work being done by the CCAH.”

— Dr. Debra Scheenstra
Honoring patients through the CAMF program since 2001



A growing number of veterinary clinics have become loyal supporters—142 clinics have been giving to the CAMF for 10 consecutive years or more. The CCAH appreciates their dedication and honors these clinics through the Garrod Society, which recognizes donors for their loyalty.

Each year, over 300 clinics contribute more than \$250,000 to the CAMF and help fund research to better identify, diagnose, treat and prevent animal diseases and conditions. One such example is a study on why cats eat grass. This study revealed the behavior is normal and is inherited from their feline ancestors, who ate grass to purge their intestines of parasites. Understanding that this behavior

is instinctual is important in protecting the health of our feline companions.

“A practical tip from this CAMF-funded project is the value of an indoor grass garden for cats to munch on instead of possibly eating toxic houseplants,” explains Dr. Benjamin Hart, a CCAH researcher.

For the estimated 36,000 individuals a year whose pets are honored through the CAMF, we hope to lighten their spirits and bring hope through improving the lives of companion animal friends. 🐾

For more information about the **Companion Animal Memorial Fund**, please contact the Development Office at (530) 752-7024 or visit www.vetmed.ucdavis.edu/CCAHA/donations/camf.cfm.

For more information on **Pets and Toxic Plants**, visit www.vetmed.ucdavis.edu/CCAHA/health_information/plants_pets.cfm

My Love Affair with Cats

A devoted breeder of British Shorthair cats, Kathleen Lawton has always loved cats. But her love affair with this particular breed began in 1974, when she first encountered these special cats at shows in Europe.

“Cats are, and have always been for me, the most entrancing creatures on earth: beautiful to look at and to listen to (what is more soothing than a soft, low purr?), a delight to watch, fascinating to get to know, a boundless source of joy, amusement and pleasure,” says Ms. Lawton.

She currently has three British Shorthairs. Because they are all healthy, Ms. Lawton considers herself lucky. She adds, “I am equally lucky knowing that I live near enough to UC Davis that, if



Buddy Guy, one of Ms. Lawton's champion British Shorthair cats

anything goes wrong, I can get them to the very best care quickly.”

As a member of the Heritage Society, Ms. Lawton's devotion to cats also transcends the present to benefit future generations. “With the help of the Center for Companion Animal Health,

I hope to be able to help cats, in some way, long after I'm gone. I've endowed a scholarship for veterinary students and am also deeply involved with SOCK FIP, raising money for FIP research.” 🐾

“UC Davis offers hope—for research, for treatment, for a cure. We who've suffered loss always hope that a new generation of animals, one day, will not have to endure some of the diseases that plague our animals today. And so we look to UC Davis, knowing that our animals' future is in the best of hands.”

— Kathleen Lawton

Skye—Our Motivation for Finding a Cure



Skye, a one-year-old Golden Retriever, loves to go everywhere with her owners, Thomas and Alice Ragain. She especially enjoys taking long walks with them around their home in rural Idaho.

Possessing a great desire to please, Skye also enjoys learning new skills. “We are very proud of Skye. She recently passed level one obedience training ‘with honors,’” Mrs. Ragain shares with delight.

Good obedience is one of the hallmark traits of the Golden Retriever breed. For this and many other reasons the Ragains love Skye, and their affection for the breed goes back many years.

During 1980s, while living in the Sutter Creek area, they brought their first Golden Retriever to the School of Veterinary Medicine for treatment of elbow dysplasia. A few years later, he developed a devastating cancer, known as hemangiosarcoma.

Through their dog's battle with the disease, the Ragains grew determined to find answers and recognized the impact of research being done at the CCAH. Their dedication to finding answers led them to include the center in their estate plans.

To learn more about the **Heritage Society for Animals** and estate planning, please call the Development Office at (530) 752-7024.

Thanks to the Ragains and other dedicated supporters, the CCAH is investigating cancer to improve the quality of life for Skye and other canine companions.

Skye is the Ragain's fourth Golden Retriever, and they are committed to finding a cure for this cancer, which is so common to the breed.

“We are hopeful that more research will provide insight into this disease (hemangiosarcoma) and someday yield a cure,” says Mr. and Mrs. Ragain. 🐾

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CAH Update

Watch for more information on caring for senior pets in our upcoming issues.



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The CCAH is dedicated to advancing studies in veterinary medicine—encompassing new ways to prevent, diagnose and treat diseases including cancers, genetic and immune disorders, infectious diseases, kidney and heart diseases, and nutritional disorders in companion animals.

For subscription questions, contact the Development Office at (530) 752-7024 or development@vetmed.ucdavis.edu.

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Cassie,
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cherished
companion

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