

COMPUTED TOMOGRAPHY

(CT cont.) CT scans are useful in diagnosing some types of brain, spinal cord, nasal, and ear diseases. Our doctors often recommend CT prior to surgical removal of certain types of tumors to determine the extent of the disease and to aid in forming a surgical plan. Sometimes CT can be used to evaluate the lungs for evidence of cancer metastasis. In some instances, CT-guided biopsies are possible. CT is also helpful for evaluating orthopedic patients with elbow dysplasia or complex fractures.



MAGNETIC RESONANCE IMAGING

Unlike a CT scan, MRI does not involve radiation. Instead, it uses a powerful magnetic field, radio waves, and a computer to create a cross-sectional image of the patient's internal organs and structures. These images provide more detail and better contrast between the different organs compared to those produced by CT. MRI is particularly useful for imaging the brain, spinal cord, soft tissues of the musculoskeletal system, and tumors. SAGE specialists will help determine if CT or MRI is more appropriate for your pet's individual situation.

SAGE works closely with AnimalScan to manage MRI services on-site. These studies can be performed in either Campbell or Redwood City.

Please note that general anesthesia is required for MRI.

We provide comprehensive specialized care for your pet through the integration of science and compassion.

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Diagnostic Imaging

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ULTRASOUND

Unlike radiology, ultrasound uses sound waves to produce images of organs and structures in the body. A transducer encased in a probe produces the sound waves. As the probe passes over the surface of the body, sound waves bounce off internal organs, fluid, and tissue. The waves are then measured and translated into an image on a monitor.

Ultrasound is very useful for evaluating organs in the abdomen to determine their size and appearance, as well as to assess if masses or nodules are present. Ultrasound also can detect the presence of abnormal accumulations of fluid in the abdomen or the chest. Echocardiography uses ultrasound to evaluate the chambers and valves of the heart.

With ultrasound guidance, our doctors can obtain tissue or fluid samples to aid in the diagnosis of different medical conditions. Fine-needle aspiration uses a syringe and small needle to draw up a sample of cells. Biopsies are performed using larger needles to obtain pieces of tissue for analysis. Both techniques may require heavy sedation or anesthesia to ensure your pet's safety.

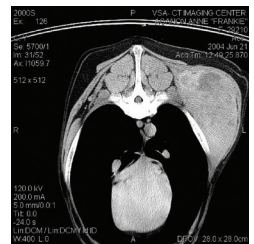
In general, sedation is not required for ultrasound. However, we must shave patients for optimal evaluation, since ultrasound waves cannot penetrate hair. We also use ultrasound gel or alcohol to help the probe make contact with the skin.

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CT is used to create a cross-sectional radiograph that allows visualization of bone, tissue, and organs in more detail than conventional x-rays. Our CT unit uses a helical, or spiral, technique in which it rotates around the patient, so multiple x-ray beams come from different directions at one time.

This allows for the study to be performed quickly. Even so, a short period of general anesthesia or heavy sedation is required during CT scans so the patient doesn't move.

(CT cont.)



At SAGE Centers, we offer a variety of methods to take diagnostic images of your pet, including radiology, ultrasound, and computed tomography (CT). Our doctors will talk to you about which technique is most useful to diagnose your pet's condition. Additionally, SAGE partners with AnimalScan to evaluate patients requiring magnetic resonance imaging (MRI).

RADIOLOGY

We use digital radiography to take images of bones, organs, and other body structures. Electromagnetic waves, or x-rays, pass through body structures and onto digital x-ray sensors to create images based on the amount of radiation absorbed.

For example, bones absorb the most radiation, so they appear white on x-rays. Air absorbs the least amount of radiation, so lungs appear black. Tissues and organs absorb medium amounts of radiation, so they tend to appear gray on x-rays.

These images can be manipulated or digitally enhanced with software to improve interpretation, and they can be stored and transmitted electronically.

Contrast studies can be performed utilizing radiography. A contrast agent (dye) can be injected intravenously, directly into an organ (like the bladder), or around a structure (like the spinal cord) to make the organ or structure easier to see on radiographs.

Sometimes sedation or general anesthesia is required to take radiographs, especially for orthopedic evaluation or for contrast studies.

