How do I refer a patient for an MRI or CT?

You must contact us to arrange a referral. Once a referral has been arranged, the owner may then schedule an appointment directly with us.

We will ask You to e-mail us a copy of the medical record or the owner should bring the previous results of the animal. However, if You have any X-rays that You are unable to mail to us in time for the appointment, we ask that the owner please bring these with him/her.

The images will be read by two highly-qualified veterinarian („double reading"). Results of the MRI or CT will be returned to Your office within 72 hours after the appointment.

What happens to my patient after arrivel at University Kaposvár, Institute of Diagnostic Imaging?

After arrival

1. our veterinarian answers the owner's questions and figure out a routine physical examination before anesthesia.
2. After implantation of an intravenous catheter, the pet will be anaesthetized and intubated.
3. CT/MR examination
4. After diagnostic imaging the pet get into the recovery room to wake up. During the recovery period You will get a short presentation about the examination.
5. When the animal is fully awake, is ready for the home-way

How and when will I get the result of the diagnostic imaging procedure?

The images will be read by two highly-qualified veterinarian („double reading"). Results of the MRI or CT will be returned to Your office within 72 hours after the appointment.

The CD/DVD containing the images will be yielded immediatelly after the examination to the owner.

We do not discuss any further therapeutical options with the owners.

If You have any question about CT/MR examination, please, do not hasitate to contact us for consultation!

C**omputed tomography (CT)**

Computed tomography (CT) was introduced into clinical practice in Britain in the early 1970s, and was developed initially as a brain scanner but other applications were quickly realized. The applications in veterinary medicine are continually being explored, and accessible CT imaging centers are emerging. In many cases, CT imaging can provide valuable information that cannot be obtained with ultrasound and radiography. It is important

for veterinarians to know the indications for CT imaging so this modality can be incorporated into a case when financially feasible.

Advantages of computed tomography

Conventional radiographs depict a three dimensional object as a two dimensional image. Their main limitation is that overlying tissues are superimposed on the image. Computed tomography overcomes this problem by scanning thin slices of the body with a narrow x-ray beam which rotates around the body. Another limitation of the conventional radiograph is its inability to distinguish between two tissues with similar density, such as soft tissue and fluid. Computed tomography can differentiate between tissues of similar density.

How it works?

The information acquired by CT is stored on a computer as digital raw data and an image can be displayed on a video monitor. The image is made up of a matrix of thousands of tiny squares or pixels (65000 pixels in a conventional image). Each pixel has a CT number (measured in Hounsfield units) attributed to it. The CT number is a measure of how much of the initial x-ray beam is absorbed by the tissues at each point in the body. This varies according to the density of the tissues. The denser the tissue is, the higher the CT number, ranging from -1000 HU (air) to 1000 HU (bone). Soft tissues average 0 CT units.

To image an area of the body in which many of the tissues have a similar density - for example, the mediastinum or abdomen - a narrow range of CT numbers is selected. These can be spread out over the available gray scale so that two tissues with only a little difference in density will be ascribed separate shades and can therefore be differentiated.

Indications for CT

Structural malformations in the depth, tumors, abcesses, vascular disorders, chronic fractures, hematoms etc. (See the Table.)

When should I refer a patient to MR imaging?

The MR is a specific imaging modality for soft tissues, especially for the nervous system („gold standard"), joints, cardiovascular system and the abdominal organs.
It can be useful in situations see below:

1. No diagnosis with other diagnostical modalities
2. The owner is afraid of invasive methods (eg. liquor extraction)
3. The owner wants to have a detailed diagnosis in a difficult decision situation

Special fields:
Epileptic disorders
Vestibular syndrome
Neck- or dorsal pain
Paresis
Ataxia
Lamness
Abnormal nasal discharge, nasal bleeding

Clinical indication for CT/MR imaging:

Body region	MRI	CT
Skull	▪ Arteriovenosus malformation and aneurysm ▪ Congenital anomalies (hydrocephalus) ▪ Traumatic injury with negative CT ▪ Infarct ▪ Inflammation ▪ Primer and metastatic tumors ▪ Sella and pituitary disease (central Cushing-disease) ▪ Vasculitis ▪ Epilepsy	▪ Acute intracranial trauma ▪ Craniocervicalis junctio osseus anomalies ▪ Skull fracture ▪ Skull-base tumors
Orbita	▪ Cortical blindness or n.opticus diesease ▪ N. opticus inflammation ▪ Retrobulbar tumor or mass ▪ Retinal bleeding or subretinal effusion ▪ Blindness (acute onset) ▪ Vascular anomalies	▪ Orbita trauma with fracture
Head and neck	▪ Nasal tumors ▪ Mass in the cervical region ▪ Otitis interna et media ▪ Oropharynx and nasopharynx ▪ Salivary glands ▪ Thyroid mass (with scintigraphy)	▪ The osseus head and neck trauma ▪ Mass connected to teeth ▪ Otitis interna et media ▪ Skull-base tumors
Spine	▪ Congenital anomalies Discospondylitis ▪ Intervertebral disc disease (IVDD) ▪ Myelitis ▪ Primer, secunder and metastatic tumors ▪ Paraspinal/vertebral tumors ▪ Post op. recurrency of IVDD ▪ Spinalis stenosis ▪ Syringomyelia, hydromyelia	▪ Vertebral fracture
Orthopedics	▪ Avascularis necrosis (Legg-Calve-Perthes disease) ▪ Joint effusion ▪ Lymphoma and multiplex myeloma ▪ Meniscus, tendon injury ▪ Osteomyelitis and septic arthritis	▪ Complex fractures ▪ Prosthesis planning

	▪ Primer bone tumors ▪ Soft tissue sarcoms	
Abdomen	▪ Adrenal gland masses ▪ Liver masses ▪ Pancreas masses ▪ Renal masses ▪ Spleen masses ▪ Portosysthemic shunt	▪ Ectopic urether ▪ Renal/urethral stone
Chest		▪ Primer or metastatic pulmonar carcinoma ▪ Pleural disorders ▪ Pneumothorax ▪ Pneumonia, abscess and empyema ▪ Metastasis screening
Pelvis	▪ Anal sacculus adenocarcinoma ▪ Urinary bladder carcinoma ▪ Soft tissue sarcoma ▪ Primer bone tumor ▪ Prostate carcinoma ▪ Uterus tumor	▪ Trauma (complex fractures)
Cardiovascular system	▪ Pericardial and cardial mass	
Vascular structures	▪ Intracraniali arteriovenosus malformation and aneurysma ▪ Thrombosis (aorta, v.cava, v. portae)	▪ Lung embolisation