

**Welcome to the website of Pécs Diagnostic Center. Below you will find detailed information on CT, MRI and DEXA examinations.**

## **INTRODUCTION**

The Pécs Diagnostic Center (NeuroCT Ltd.) started its activities in 1994 on a civil initiative. The aim of the founders – two foundations of the then Medical University of Pécs, and private individuals - was to create a diagnostic center of European standards. The modern imaging equipment installed by the center has contributed to raising the standard of patient care and medical education in the region, as well as research and development (R&D).

Today, the owners of the Pécs Diagnostic Center (NeuroCT Ltd.) are the „Pro Universitate Quinqueecclesiensis Foundation” of the Faculty of General Medicine of the University of Pécs and the „Olivecrona Foundation” of the Department of Neurosurgery, and operates as an independent spin-off Ltd. of the Clinical Center, marketing university diagnostic knowledge.

Our Center performs several tasks. On the one hand, it provides CT, MR, DEXA imaging diagnostics to outpatients and inpatient patients at a high professional level, and on the other hand, it actively participates in undergraduate and postgraduate medical education and related scientific research.

## **PATIENTS SERVICES**

Pécs Diagnostic Center has a contract with the National Health Insurance Fund (NEAK), so the CT, MR, and DEXA examinations of patients with a valid Hungarian social security number „TAJ card” and a specialist referral are funded by the NEAK.

Foreign citizens of the European Union with insurance contracts can also use our services free of charge.

Our free diagnostic capacity available due to the volume limit of insured examinations imposed on by National Health Insurance Fund (NEAK), enables the opportunity to offer private (self-paid) service, as well. See the price list of our private (self-paid) examinations (CT, MR, DEXA) on a separate sheet!

## **R&D ACTIVITY**

The Pécs Diagnostic Center (NeuroCT Ltd.) established the Pécs Clinical Neuroscience Imaging Consortium with the University of Pécs in 2007, through which the Hungarian Academy of Sciences (HAS)-PTE Clinical Neuroscience MR Research Group has been operating here since 2012.

The owner of the Research Group has been the Eötvös Lóránd Research Network (ELKH) since 2019. It has access to two advanced clinical MR (1.5T and 3T) human whole-body scanners and one 4.7 T dedicated small-animal MR scanner.

The multidisciplinary working group of the university (MR physicist, informatics expert, biologist, psychologist and neuro-physicians) guarantees a high powered scientific team to perform clinical and animal experimental research.

High field MR imaging is capable of following the functioning of the human brain directly and non-invasively; is capable of localizing autonomic human brain functions. It is also capable of studying the functional logics defined by brain structure and activity such as cognition, basic functioning of limbic affective-cognitive network, brain reward system, hearing visuo-tactile synchrony, pain-related autonomic (cardiac) response, etc. Accordingly, the team has been in the position to perform basic, applied and clinical research concerning human brain mapping and higher cognitive functions. The group has concentrated on body-mind relationship, on its irregularities and on the disordered mental functioning behind pathological conditions. The research group makes ongoing efforts to translate results of animal research into human clinical diagnostics.

#### **Publications of the group are available**

at <https://m2.mtmt.hu/gui2/?type=institutes&mode=browse&sel=institutes11058>

#### **OUR DIAGNOSTIC MISSION STATEMENT**

The Pécs Diagnostic Center has been committed to high-quality healthcare for almost three decades. With our work, we strive to diagnose diseases as accurately and swiftly as possible in order to promote the healing of our patients as quickly as possible, supporting the most effective work of the treating physicians. To this end, we operate a modern, reliable imaging fleet, and on the other hand, we use highly trained human resources.

#### **QUALITY POLICY**

The role of imaging diagnostics has grown significantly in recent decades and today, most therapeutic interventions rely on modern diagnostic methods. The technical standard of the imaging modalities operating in our institute and the training of the specialists operating them play an important role in the healing activities of the Clinical Center of the University of Pécs, just like in the work of the other referring institutions. As the development of imaging diagnostics has been uninterrupted even today, our

institution is committed to the development and maintenance of diagnostic, educational and research work representing the international level.

In the vision of NEURO CT Pécs Diagnostic Center Ltd., the following basic aspects have been defined:

- to be a key provider in meeting the imaging diagnostic needs of the region;
- to adapt to the needs of patients and their referring physicians, using the latest advances in medicine;
- serving the respect and needs of the sick person, resolving their vulnerability;
- assisting medical and professional training and further training in order to ensure the effectiveness of future research and scientific work;
- developing our own diagnostic activity with research results, developed methods and tools supported by our diagnostic equipment;
- close professional and scientific cooperation with specialized clinical fields;
- protecting the health of patients and staff during activities, creating and maintaining a healthy environment.

The Pécs Diagnostic Center (NeuroCT Ltd.) considers the main goal of its tasks to be satisfying both domestic and international quality requirements, high-level, cultured patient care with human health diagnostic equipment, and the availability of our services within a reasonable time, including fast and flexible administration.

- Our institute and its management are committed to quality, performance-oriented work, to prove this we operate a quality management system based on the MSZ EN ISO 9001: 2015 standard and have decided to maintain it. We are committed to meeting the applicable requirements and provide the operation and continuous improvement of the system and provide the necessary resources.
- When selecting our employees, we take great care to have the necessary professional qualifications and internships and, if necessary, to prove special knowledge and skills.
- We ensure the continuous training and further training of our employees in order to keep pace with the development of the service they provide, the relevant laws, regulations, official regulations and to know the latest results of science and technology related to their field.
- We are constantly improving our service in terms of employee training, quality management, our equipment and material assets, and our infrastructure. \*\*\*
- In order to raise the service level of Pécs Diagnostic Center, it strives for the process-oriented organization of its activities, in which problem-based problem solving and decision preparation play a key role.

- We consider the motivation of our employees and their secure vision that can be planned in the long run to be of utmost importance, for this purpose we strive to get to know their satisfaction, we ask for their opinions and thoughts regularly.
- Our staff sees their profession as a mission and strives to make it felt and experienced by all those who come for examinations.
- We select our suppliers so that the delivered products / services meet the requisite requirements. We regularly evaluate the activities of our suppliers and establish a close relationship only with those who meet the quality requirements we expect. Pécs Diagnostic Center strives to establish a permanent, long-term and good partnership with its subcontractors, which fundamentally influences the quality of its work, and in order to achieve this, we regularly communicate with our strategic partners.
- Diagnostic examinations are performed under appropriate hygienic conditions. We pay attention to properly informing our patients and ensuring optimal patient safety and patient discretion.
- In order to protect the environment, we pay increased attention to complying with legal and other requirements, reducing our energy use and waste.
- In partnership with our European-standard equipment, we provide services for organized research and development, and we see this as a creative driving force in medicine with which we can contribute to the experimentation and practical introduction of new therapeutic procedures.

## **TEACHING/EDUCATION**

The Pécs Diagnostic Center is set up to provide professional training in all forms and facilities.

Below you will find detailed information on CT, MRI and DEXA examinations.

## **CT SCAN**

Usually recommended in cases where an exact diagnosis cannot be established by the use of laboratory tests, conventional X-ray examinations and ultrasound.

In order to reach the full diagnostic value of CT scans, intravenous iodinated contrast material may be required to be administered, which may cause an increased risk to patients having certain conditions or diseases, or taking certain medications.

Therefore, to avoid any complications, at the request of any such examination, patients

- suffering from kidney disease,
- suffering from thyroid disease,
- being older than 70 years

are required to present a routine laboratory test, less than one month old, consisting kidney and thyroid functions.

Abdominal examinations require patients to drink 5–10 dl contrast material during the hour preceding the examination, to render the intestines easier to be distinguished.

### **IMPORTANT**

- Prior to examination, be sure to consult your referring specialist about the discontinuation of taking metformin-containing preparations!
- Please indicate if you are pregnant, or when the possibility of pregnancy cannot be ruled out.
- If you are taking medicines for diabetes, be sure to inform the specialist who referred you for the scan, or make it clear to our colleague managing your appointment!
- Please indicate whether you know about hypersensitivity to contrast agents or any other material.
- CT scan may be performed at any age, but considering the use of X-radiation, examination of children is performed only if it is absolutely necessary.
- We are unable to perform the examination at parameters exceeding 200 kg body weight or 150 cm abdominal circumference.

### **INDICATIONS OF CT SCAN:**

- detecting –or ruling out –diseases of the nervous system (brain and spine);
- assessing the state of facial bones and sinuses;
- in case of suspected cancerous diseases, aiming for a precise examination of the extent of the tumor known or suspected, in any area of the body;
- detection and monitoring of diseases of the lung parenchyma;
- detection of inflammatory diseases;
- monitoring the effectiveness of cancer treatments and anti-inflammatory therapies;
- assessing the extent of the bleeding and the state of bones and soft tissues, in the case of an accident or injury;
- detection of stenosis and vascular occlusion.

### **SCANNED REGIONS:**

- Skull
- Orbita
- Inner ear

- Neck·Chest
- Abdomen
- Lesser pelvis
- Spine

Angiography:·Skull·Neck·Chest·Abdomen·Lower limbs

### **MRI SCAN**

Primarily, MRI is used for examining the diseases of the skull, the spine and the joints, but it is also suits perfectly for the diagnostic examinations of the neck, the chest, the breast, the abdomen and the lesser pelvis. In addition, we can gain information about the state of the blood vessels, as well.

### **IMPORTANT!**

- Examination of pregnant women is performed only when it proves to be absolutely necessary, though, no adverse fetal effect of the examination has been established.
- Examination of young children, claustrophobic patients and patients with intellectual disabilities can be performed under general anesthesia.

Please indicate:

- if you have a pacemaker implanted,
- if you have a jaw implant implanted less than half a year ago,
- if you have cerebral or aneurysm clips, implanted after year 2000,
- if you wear orthodontic apparatus (braces).

We are unable to perform the examination:

- when body weight exceeds 200 kilograms
- when abdominal circumference exceeds 150 cm

In the following cases, a written expert opinion is required on the MR-compliance of the material implanted in the patient's body:

- orthopaedic implant metals (screw, plate, nail, wire),
- joint replacement,
- any other metal object or metallic material

### **INDICATIONS OF A MRI SCAN**

#### Skull MRI

- stroke
- suspected multiple sclerosis, or monitoring of a known case
- epilepsy
- potential nervous system tumors
- cognitive decline
- headache
- dizziness

#### Orbita MRI

- tumor
- inflammation

#### Sella MRI

- suspected pituitary tumor
- high levels of prolactin hormone

Cervical soft tissue MRI: for monitoring the spread of the pharynx and larynx tumors and establishing whether the lymph nodes are affected.

MR Angiography (MRA): assessment of the degree of cervical vascular stenosis succeeding an ultrasound examination.

#### Spine MRI (cervical, dorsal, lumbar section)

- trauma, inflammation
- bone metastasis
- spinal hernia

#### Chest MRI

- helps to refine the results of a chest CT
- also in cases where a CT cannot be performed

#### Cardiac MRI

- assessment of myocardial viability
- detection of congenital or acquired heart failure

#### Abdominal MRI

- assessment of unexplained liver nodules
- pancreatitis
- biliary tract: inflammation, congestion, gallstones, suspected tumors
- small intestine: (MR enterography) in cases of inflammatory bowel diseases, Crohn's disease with complications, intestinal tumors, hemorrhagic bowel disease and intestinal obstruction, and also at the detection of abscesses and fistulas, it gives a more accurate picture of the small intestine as an ultrasound or a CT scan.
- colitis

#### Lesser pelvic MRI

- kidney: revealing the cause of blood in urine and urinary outflow obstruction, in the case of suspected tumors.
- adrenal gland
- bladder tumor detection
- MRI scan of the female lesser pelvis: in case of suspected gynecological tumors (ovarian, uterine, cervical) and endometriosis
- MRI scan of the male lesser pelvis: At high PSA levels a prostate MRI can facilitate the differentiation between cancer and an inflammation.

MRI scan regions of the joints: knee, hip joints, elbow, wrist, hand, ankle, foot.

3T MR technology facilitates a high precision examination of all joints, providing millimeter resolution.

An accurate diagnosis of mobility problems, joint pain, sports injuries, and the cartilage, ribbon, bone, muscle and joint capsule tissue injuries can be achieved. The short duration of the examination reduces the strain on patients suffering from painful injuries, and also provides excellent results in terms of effectiveness of the treatment.

Whole-body MRI: Oncology/tumor diagnostics

Main indications are as follows:

- assessment and monitoring of the state of a tumor;



- detection of the possible metastases of a known tumor;
- facilitation of the detection of the latent original tumor underlying known metastases;
- Assessment of supplementary information for determining the actual stage of a cancer.

#### Breast MRI

- detecting, ruling out, and monitoring tumors. Breast cancer is the most common type of cancer among women. In Hungary, one in ten women develops breast Survival and recovery depends on early detection. This is facilitated by the regular complex breast examination and the mammography screening every two years, the results of which are complemented by contrast-enhanced (contrasted) breast MRI.
- detection and ruling out of an implant damage. Breast implants should be checked from time to time, as it may be damaged or its wall might deteriorate. Breast MRI is the most suitable way of prosthesis integrity assessment, together with a complex breast examination.
- measuring the effect of chemotherapy

#### **DEXA SCAN**

During this procedure we use X-rays to examine the mineral density of the bones, and as a result, we can establish whether the patient has osteoporosis.

The test can be carried out in the lower back, hip and forearm regions, in accordance with present professional guidelines. Examination of the three regions takes about 15 minutes and is completely painless.

#### **CONTRAINDICATIONS OF A DEXA SCAN:**

- pregnancy
- presence of contrast material in the trunk
- presence of radioactive isotopes in the trunk
- body weight exceeding 120 kilograms

For DEXA scans, a specialist's referral is not necessary.

#### **EXAMINATION FULLY PAID BY THE PATIENT**

We provide high-quality diagnostic services to our clients, meeting high professional standards, requiring short waiting time.

Our professional services include:

- all examinations being carried out in the shortest possible time
- examinations performed in accordance with international protocols
- medical reporting, which means that all medical reports are prepared on the basis of experienced specialist's professional knowledge and experience.
- visual materials handed out immediately after the test
- a written medical report mailed according to your agreement
- the possibility to have the medical reports translated to English or German language.

Due to the occasional demand of immediate examinations of serious, life-threatening cases, we cannot offer you a 100% guarantee for observing the agreed time to the minute. In these rare cases, we strive to carry out the examination as quickly as possible, and to inform our patients properly and accurately.

### **MRI Examination**

In case of several complaints and symptoms, *targeted assessment* of possible causes *requires* unique brain Magnetic Resonance Imaging (MRI) protocol with *specific workflow*. Therefore, if you wish a brain MRI without admitting indications of a specialist physician, we offer the following Brain MRI Screening and Diagnostic Packages: "Headache", "Dizziness/Vertigo", "Forgetfulness", and "Stroke".

- We accept requests for inner-ear MRI only with admitting indications of an otolaryngology specialist physician.
- We accept requests for "Epilepsy" MRI protocol only with admitting indications of a neurologist.
- We accept requests for "Sella" MR imaging protocol only with admitting indications of a specialist physician.
- We accept requests for abdominal MRI only with admitting indications of a specialist physician. In case of abdominal MRI patients, supposed that they had prior CT or US of liver, bile-duct and/or pancreas anatomy regions, we ask for imaging results and radiology reports of corresponding exams. Additionally, prerequisites of abdominal MRI: fresh laboratory report with detailed blood results, liver and kidney functions, pancreatic-amylase values, CRP inflammation markers, ESR (erythrocyte sedimentation rate) test data. These lab test may be requested by your general practitioner. It is very important to indicate medical history and factual questions on the admitting indications!
- Prostate MRI exams require additionally recent laboratory test results with PSA values.

Other than those listed above, MRI examinations do not require written admission of a physician. Nevertheless, all prior relevant medical findings as radiology reports and laboratory results are essentially helpful to the radiologist to obtain a precise and detailed diagnostic opinion. Please take these medical records with you to the MRI exam and submit these documents at the admission.

Because of applied ionizing radiation, Computer Tomography (CT) examinations necessitate written admission of a physician. For inner-ear CT patients we require admission from an otolaryngology specialist physician.

Our institute, Neuro CT Pecs Diagnostic Centre excludes all responsibility for any direct or consequential damages resulting from non-professional indication of the anatomy range required to examine, would such a request (despite our contrary recommendations) indicate a region inappropriate to localize and determine the real cause of the complaints.

Please observe, that our examination prices/charges depend on the use of imaging contrast agents. Native examinations use no contrast agent, while contrast enhanced CT and MRI exams use specific contrast agents. Recommendation of contrast agent use is strictly the competence of the attending radiologist while the use of such agents requires the informed consent of the patient.

## **OUR PRICELIST**

The price of the examination includes:

- performing the examination
- providing the patient with a written medical report and the visual materials of the examination completed.

It does not include a medical consultation related to previous examinations, discharge notes, final reports and other medical documentation.

If you have a valid EU health insurance card, your examination will be funded by the Hungarian National Health Insurance Fund. We accept cash and credit card as methods of payment.

## **CONTACT**

Pécsi Diagnosztikai Központ (Pécs Diagnostic Center)

Address: 7623 Pécs Rét u. 2. Phone: +36-72-242-312

For examinations fully paid by the patient, please call the following phone numbers to set an appointment: +36-72-213-169 or +36-30-993-18-16 Fax: +36-72-242-315

E-mail:info@neuroct.hu

## **HOW TO REACH US**

Pécs Diagnostic Center is easily accessible both by car and public transport. Our Institute is located in the city center of Pécs, at the crossroads of Rákóczi and Rét Street, in the Neuroscience block of the University of Pécs. Parking: Parking place is available, for a fee, at the main entrance to the institute, in Rét Street.