

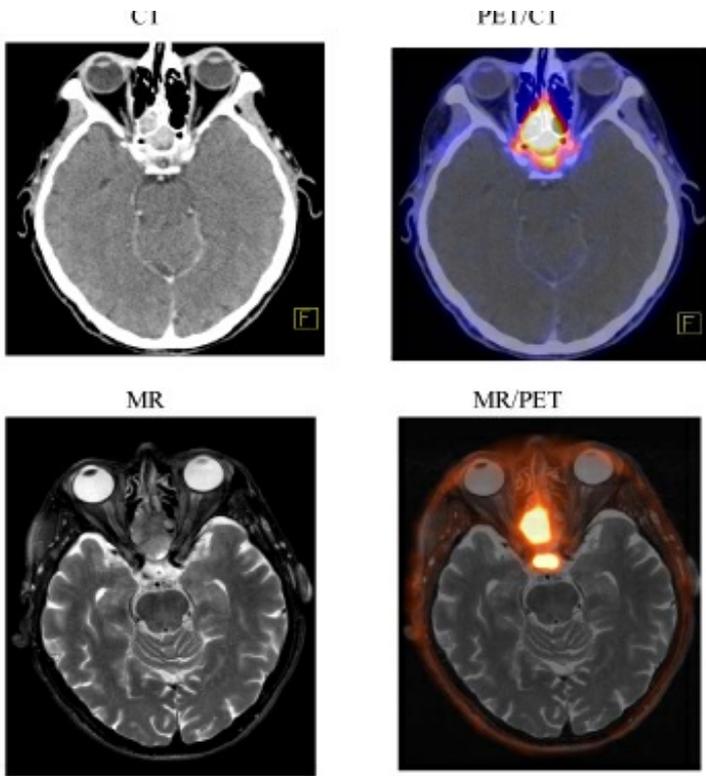
## Healthcare industry BW

### 6.56 million euros for first full-body PET-MRI prototype

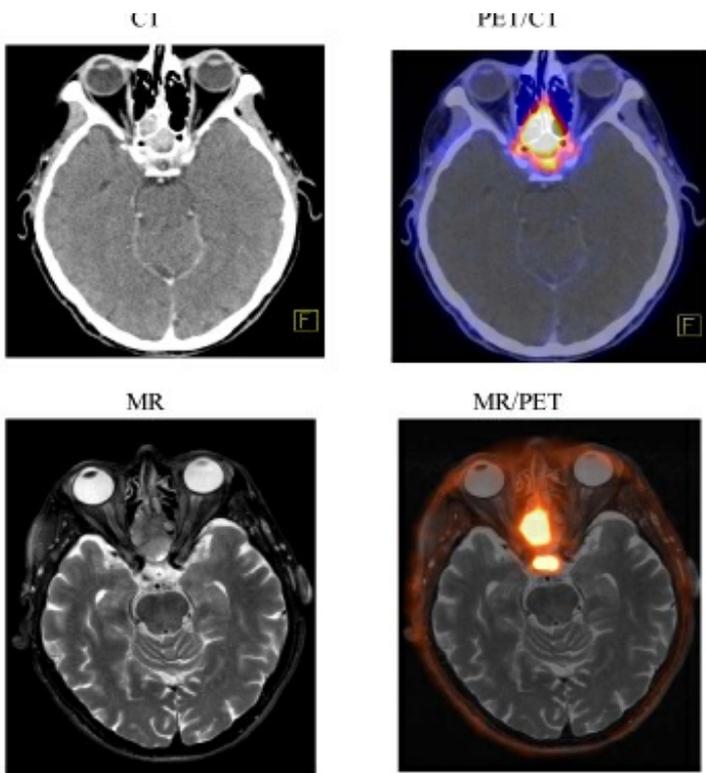
**The Joint Science Conference in Bonn has announced that the University of Tübingen will receive 6.56 million euros for the purchase of an entirely new multimodal full-body tomography system for the diagnosis of cancer. The new full-body PET-MRI combines positron emission tomography (PET) with magnetic resonance imaging (MRI) in one device. In the future, this technology will be able to present the structure as well as the function of organs in the entire body in a single examination.**

Prof. Dr. Claus D. Claussen, Medical Director of the Department of Radiology at the University Hospital of Tübingen: "In future this will drastically reduce the stress experienced by patients because the time required for examination can be greatly reduced. In addition, there will be no need to expose patients to X-rays. This technology helps to detect malignant tumours or metastases far earlier than with traditional methods as well as enabling a more reliable characterisation and localisation with regard to other organs. As a result, the method allows for earlier and more targeted therapies."

The University Hospital has already made important progress towards the development of a head-PET-MRI. The scientists' major challenge now is to transfer the imaging technology from the head, which is relatively small, to the entire body. The funding being given for the world's first full-body PET-MRI prototype is a recognition by the German Science Council of the Tübingen radiologists' work in the field of PET-MRI.



Comparative presentation of a meningioma in a 70-year-old patient using different imaging techniques  
 © University Hospital of Tübingen



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 © University Hospital of Tübingen

Every year, the Science Council in Berlin calls on German universities to apply for funding for new science buildings and large equipment. The Tübingen scientists' project proposal was evaluated as "excellent" and came fourth out of the 18 projects to receive funding. Proposals that are recommended for funding by the Science Council must also be accepted by the Joint Science

Conference.

Prof. Claussen: "We are pleased that the Science Council is recommending the funding of a German innovation. This method stands an excellent chance of establishing itself as diagnostic method for the examination of tumour patients. The development of the device means that the Excellence Centre for Imaging Methods at the University Hospital of Tübingen funded by the state of Baden-Württemberg will receive even greater international recognition."

## PET-MR - 'made in Tübingen'

The planned full-body PET-MRI system is based on internationally outstanding Tübingen research in the field of PET-MR small animal imaging (Laboratory for Preclinical Imaging, Prof. Bernd Pichler), which, amongst others, is funded by the National Institute of Health, USA, the German Research Foundation and the German Ministry of Education and Research (BMBF), and which has been published in the scientific journal "Nature".

The novel imaging method, tested in the Tübingen Laboratory for Preclinical Imaging, enables the non-invasive investigation of mice in basic biomedical research, thereby providing an important contribution to the reduction of the number of experimental animals used.

Based on the aforementioned technique tested on mice, Tübingen researchers, in cooperation with Siemens, have developed the first PET-MR for brain imaging. In cooperation with Prof. Heinz-Peter Schlemmer from the Department of Radiology at the University of Tübingen, the first examinations of the human brain were carried out on the human brain at the end of 2006 in Knoxville, USA. The first prototype, enabling a larger number of volunteers to be examined, was put into operation in 2008 in Tübingen. This device is able to produce images of abnormal brain structures and functions.

## First worldwide clinical testing of full-body PET-MRI technology

The challenge for the scientists now is to transfer the technology from the relatively small head to the entire body. Prof. Pichler: "Together with Siemens Healthcare in Knoxville, Tennessee (USA), we are working intensively on the development of a high-resolution PET detector that can be integrated into a magnetic resonance imager (MRI) without a detrimental effect on the MR image. This is a very complex process, both technically as well with regard to data processing. We are therefore very happy to be working closely with Prof. Bernhard Schölkopf from the Max Planck Institute for Biological Cybernetics in Tübingen." In addition, the researchers are also investigating the use of tumour-specific biomarkers for the characterization of tissue in PET investigations.

The new device will be built during 2009/2010 and be ready in 2011. The first patient examinations using the new device will be carried out at the end of 2011.

### Clinical aspects

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## **Press release**

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