

## Healthcare industry BW

# The first imaging of active leukaemia cells in the body

**A team of physicians and scientists from Ulm (Germany) and Iowa City (USA) have shown how the activity of leukaemia cells can be visualised in the body by using a special marker and various different methods. The publication relating to this finding has been awarded the “Editor’s Choice Award” as one of the three best publications in 2008 by the renowned journal “Journal of Nuclear Medicine”.**

The scientists used a modified constituent of our genetic information that is required for the division of cells and labelled it with a radioactive substance. Since leukaemia cells divide very rapidly, the marker 18F-fluorodeoxythymidine (18F-FLT) accumulates in leukaemia manifestation sites.

## PET and CT visualise the distribution of the cells

The researchers used PET/CT to visualise the distribution of the leukaemia cells in the body. Positron emission tomography (PET), which involves the use of a radioactively labelled substance, reveals an enhanced cell activity, and computed tomography (CT) assigns this activity to specific body regions, just like a navigation device.

## Where cancer cells are still active after therapy

The researchers were able to show where leukaemia cells were still active, for example following the treatment of acute myeloid leukaemia (AML). "We have been able to show clearly that leukaemia cells were active in the bone marrow of the lower thigh bones, although these bone marrow regions are normally no longer involved in the formation of blood in adults," explained Prof. Sven Norbert Reske, senior author of the study and medical director in the Department of Nuclear Medicine at Ulm University Hospital.

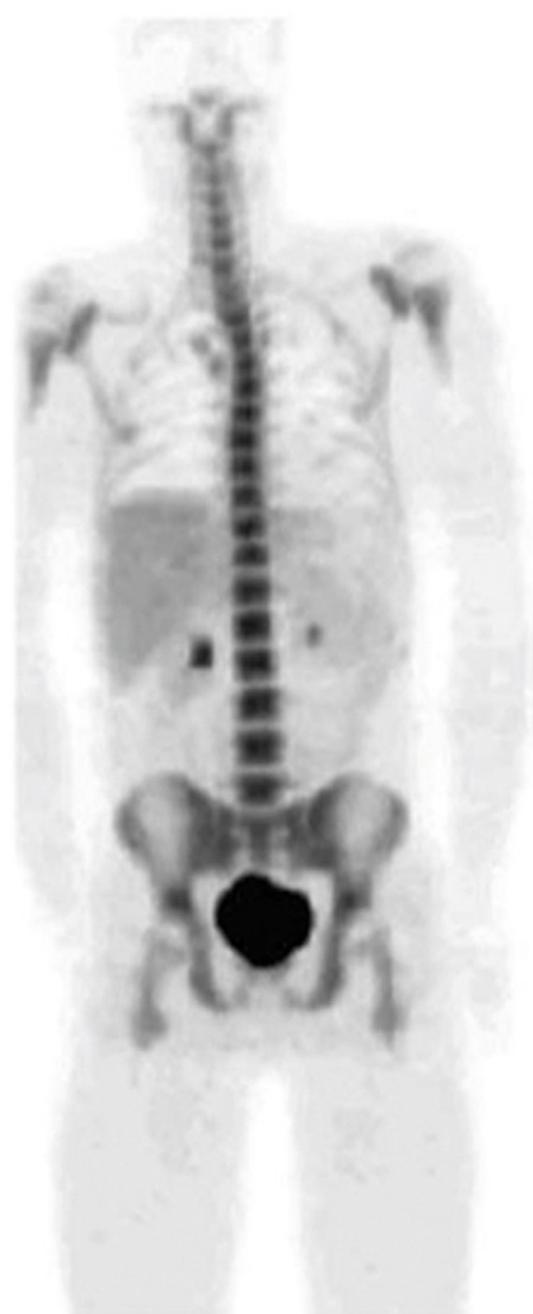
## A world-first: the visualisation of active leukaemia cells



Sven Norbert Reske  
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"We were also able to visualise active leukaemia cells outside the bone marrow - in the brain, the testicles, in lymph nodes and in the pericardium," said Reske. The researchers succeeded for the first time ever in visualising the activity of leukaemia (AML) cells. It has previously only been possible to visualise other types of cancer with similar methods.

"The insights gained are part of basic research; but it can be envisaged that they will in the future contribute to the development of specific radiotherapies or provide an additional method of diagnosing cancer using molecular biology methods in order to reach a correct treatment strategy," said Reske. The award-winning publication is available at DOI: [10.2967/jnumed.108.055335](https://doi.org/10.2967/jnumed.108.055335).



Active leukaemia cells (black) in the bone marrow (left); healthy person (right)  
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## **Press release**

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