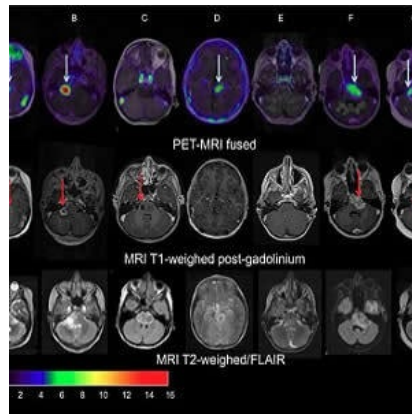




## PET/CT Predicts Therapy Effectiveness in Paediatric Brain Tumours



The first study of its kind has been conducted by researchers in The Netherlands in which whole-body positron emission tomography/computed tomography (PET/CT) scans were used to determine whether bevacizumab (Avastin) treatment of diffuse intrinsic pontine glioma (DIPG) is likely to be effective in children suffering from brain cancer. The study is published in The Journal of Nuclear Medicine.

**See Also:** [Simultaneous PET/MR Imaging - Key Benefits](#)

Guus A. van Dongen, PhD, of VU University, Medical Center, Amsterdam, The Netherlands explains that only 10% of DIPG patients survive two years after diagnosis. The tumours are resistant to all kinds of therapies. Even chemotherapy and other targeted therapies are generally unable to reach the tumour as it is located within the brain-stem.

During this study, the researchers investigated whether bevacizumab can reach the tumour in children with DIPG. They measured the tumour uptake of zirconium-89 (Zr-89)-labeled bevacizumab with PET and also evaluated the safety of this procedure and the optimal timing of imaging. Seven patients received whole-body PET/CT scans after two weeks of radiotherapy. The scans were performed 1, 72 and 144 hours post-injection and the optimal injection time was found to be 144 hours post injection. All patients were also given contrast (gadolinium)-enhanced MRI.

Results of this investigation showed that there was considerable heterogeneity in uptake of Zr-89-labeled bevacizumab. This could potentially help predict the therapeutic potential as well as toxicity and could also help in outlining strategies that could improve the delivery of drugs to these tumours.

Van Dongen adds, "Children with brain tumours and other solid cancers are particularly likely to benefit from molecular drug imaging, as drugs without therapeutic effect--based on a lack of drug-uptake in the tumour--may cause life-long side effects. Molecular drug imaging will open avenues for administering the right drug to the right patient at the most appropriate stage of the disease."

Source: [Society of Nuclear Medicine](#)

Image Credit: Sophie Veldhuijzen van Zanten and Marc Jansen, VU University Medical Center, Amsterdam, The Netherlands

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