

Publication**¹⁸F-fluorodeoxyglucose uptake of bone and soft tissue sarcomas in pediatric patients****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 1194449**Author(s)** Walter, Franziska; Federman, Noah; Apichairuk, Wipapat; Nelson, Scott; Phelps, Michael E; Allen-Auerbach, Martin; Walter, Martin A; Czernin, Johannes**Author(s) at UniBasel** [Walter, Martin](#) ;**Year** 2011**Title** ¹⁸F-fluorodeoxyglucose uptake of bone and soft tissue sarcomas in pediatric patients**Journal** Pediatric haematology and oncology**Volume** 28**Number** 7**Pages / Article-Number** 579-87**Keywords** soft tissue sarcoma, osteosarcoma, Ewing sarcoma, children, F-18-FDG, PET/CT

A high (¹⁸F)-fluorodeoxyglucose (FDG) uptake by positron emission tomography/computed tomography (PET/CT) imaging in sarcomas of adults has been reported. The current study aimed at defining the degree of (¹⁸F)-FDG uptake of pediatric sarcomas. This retrospective study included 29 patients (23 males, 6 females; mean age 14 ± 5 years) with soft tissue (n = 9) or bone (n = 20) sarcomas. Twenty-two patients (76%) underwent (¹⁸F)-FDG PET/CT and 7 (24%) had dedicated (¹⁸F)-FDG PET studies. Tumor (¹⁸F)-FDG uptake was quantified by standard uptake value (SUV)(max) and tumor-to-liver ratios (SUV ratios; tumor SUV(max)/liver SUV(mean)). Tumor SUV(max) and SUV ratios were correlated with tumor Ki-67 expression. SUV(max) ranged from 1.4 to 24 g/mL (median 2.5 g/mL) in soft tissue sarcomas and 1.6 to 20.4 g/mL (median 6.9 g/mL) in bone sarcomas (P = .03), and from 1.6 to 9.2 g/mL (median 3.9 g/mL) and 3.5 to 20.4 g/mL (median 12 g/mL) in Ewing sarcoma and osteosarcoma, respectively (P = .009). Tumor SUV ratios ranged from 0.8 to 8.7 (median 1.9) in soft tissue sarcomas and 1.4 to 8.9 (median 3.8) in bone sarcomas (P = .08). Ewing sarcoma had a significantly lower tumor SUV ratio than osteosarcoma (P = .01). Ki-67 expression correlated significantly with the (¹⁸F)-FDG uptake in bone but not in soft tissue sarcomas. All sarcomas were visualized by (¹⁸F)-FDG PET/CT imaging. A higher (¹⁸F)-FDG uptake was observed in osteosarcoma than in Ewing and soft tissue sarcomas. The results of this study suggest that the degree of tumor (¹⁸F)-FDG uptake is sufficient to allow for monitoring of therapeutic responses in pediatric sarcomas.

Publisher Universitetsforlaget**ISSN/ISBN** 0888-0018**edoc-URL** <http://edoc.unibas.ch/dok/A6004666>**Full Text on edoc** No;**Digital Object Identifier DOI** 10.3109/08880018.2011.602180**PubMed ID** <http://www.ncbi.nlm.nih.gov/pubmed/21936620>**ISI-Number** WOS:000295084800004**Document type (ISI)** Article