Kurzfassung: Nearly all children with brain tumors in Germany are treated within histology specific treatment optimization studies run by the HIT-group. Within this group a network of reference centers has been instituted to provide a central review of imaging, histology, CSF-cytology and radiation oncology. The reference center for imaging overlooks meanwhile the imaging of more than 8.000 children. The advantages and problems of the reference center for brain tumor imaging are presented.

Lernziele: Pediatric brain tumors differ significantly from adult brain tumors concerning histology and also imaging and they still are the major reason for oncologic fatality. However, some entities have reached a high event free survival. For future studies the reduction of treatment by appropriate stratification is of a higher importance than a further increase of survival in order to increase the quality of life of the surviving patients.

At diagnosis a specific reporting of staging results and the individual pitfalls for the production and interpretation of imaging are crucial for the correct stratification into the different risk groups. That rate of discrepancies between local and central evaluations is about 25% according to older and more recent publications and our own experience (Finlay et al: J neurooncol 1994; Packer et al.: JCO 2006). During treatment or a wait and watch strategy the response or spontaneous behavior has to be described correctly to allow the pediatric oncologist to take the right decisions for further treatment. The patterns of relapse have to be known to allow a differentiation between treatment related changes and true relapses.

A central review is the basis of a uniform interpretation of imaging for pediatric neurooncological studies and is meanwhile standard in all German brain tumor trials. It will be considered also as a standard in ongoing and future trials in Europe and as desirable in future US trials.