

## NEUROIMAGING AND SEIZURES

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In epilepsy diagnosis, imaging methods, both structural and functional, provide crucial information. Structural imaging, e.g. magnetic resonance imaging (MRI) and computed tomography (CT), is routinely used to detect lesions, traumas, bleedings and developmental abnormalities, which may be causes of seizures and epilepsy in general. However, it is functional imaging with methods like electro- and magnetoencephalography (MEG/EEG), PET (positron emission tomography) and SPECT (single photon emission computed tomography) that suggest or even prove epileptogenicity of a structural finding.

Especially in workup for epilepsy surgery, this is complemented by functional imaging methods for mapping of normal brain function, again using EEG and MEG, but also functional MRI.

In this presentation, an overview of the currently available spectrum of methods is given and discussed in regard to their use in the early diagnosis and subsequent evaluation of epilepsy. This is complemented by an outlook on new imaging methods entering clinical epileptology, such as the routine use of MEG and voxel-based-morphometry (VBM). Cases and real-world data are presented to illustrate application of the different methods.