

High-frequency oscillations in epilepsy and surgical outcome. A meta-analysis

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Talk based on publication by

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Current research strives for valid evidence that high frequency oscillations (HFOs) could aid the delineation of the to-be resected area in patients with refractory epilepsy and improve surgical outcomes.

We conducted a systematic review of all studies published by 5th February 2015 that related the resection of HFO-generating areas to postsurgical outcome. We compared the resection ratio between seizure free and not seizure free patients.

In total, 11 studies were included. We found comparable differences and largely overlapping confidence intervals in resection ratios between outcome groups for ripples and fast ripples. Automated detection was comparable to visual detection. Considering frequency of HFOs was related more strongly to outcome than considering each electrode that was showing HFOs. The effect sizes found in the meta-analysis are small but significant. In order to compare studies with different methodological approaches, we propose guidelines for detailed and standardized reporting.