SUPPLEMENTARY TABLES

Focus hypothesis	
1 lobe	678 patients (885 recordings)
2 lobes	173 (210)
3+ lobes	41 (49)
frontal	425 patients
temporal	645
parietal	179
occipital	105
insula	11
unclear	85
left	418
right	407
bilateral	87
unclear	88

Supplementary table 1: Summary of putative focus location based on the consensus of presurgical evaluation ("focus hypothesis").

Spike detection	
First recording	692 of 965 recordings (71%)
Repeated recordings	191 of 266 (72%)
extra-temporal	458 of 592 recordings (77%)
frontal	325 of 413 (79%)
parietal	132 of 171 (77%)
occipital	76 of 100 (76%)
insular	8 of 11 (73%)
temporal	423 of 625 (68%)
mesial temporal	90 of 132 (68%)

Supplementary table 2: Spike detection rates in different subgroups.

Resection	Outcome (≥1 year)		p (Chi-Square test)
	Engel 1	**>Engel 1**	**< 0.001**
Complete	55	11	
Partial	19	34	
No	10	20	
	Engel 1a	**>Engel 1a**	**0.004**
Complete	34	32	
Partial	13	40	
No	8	22	

Supplementary table 3a: Resection extent of MEG localizations vs. last available postsurgical outcome after at least 1 year (median 5.0y follow-up, 1st quartile 2.0y, 3rd quartile 7.0y).

Resection	Outcome (≥5 year)		p (Chi-Square test)
	Engel 1	**>Engel 1**	**< 0.001**
Complete	35	8	
Partial	10	10	
No	2	13	
	Engel 1a	**>Engel 1a**	**0.005**
Complete	20	23	
Partial	7	13	
No	0	15	

Supplementary table 3b: Resection extent of MEG localizations vs. long-term outcome after at least 5 years (median 7.0y follow-up, 1st quartile 5.0y, 3rd quartile 11.0y).

Complete MEG resection	
Follow-up	**All (including <1y)**
n	174
Engel 1	100
Sensitivity	63% (55% - 70%)
Specificity	85% (79% - 90%)
PPV	85% (79% - 90%)
NPV	63% (55% - 70%)
DOR	9.8 (4.6 - 20.8)
PLR	4.2 (3.6 - 5.1)
NLR	0.4 (0.4 - 0.5)
Engel 1a	69
Sensitivity	59% (52% - 67%)
Specificity	69% (61% - 75%)
PPV	55% (48% - 63%)
NPV	72% (65% - 78%)
DOR	3.2 (1.7 - 6.0)
PLR	1.9 (1.5 - 2.4)
NLR	0.6 (0.5 - 0.8)

Supplementary table 4: Parameters of diagnostic accuracy of complete MEG resection for a seizure free outcome (Engel 1 and Engel 1A) at the last available outcome, including early outcomes <1 year. PPV, NPV – positive, negative predictive value; DOR – diagnostic odds ratio; PLR, NLR – positive, negative likelihood ratio.

All lesionectomies			
Follow-up	**>= 1y**	**>=5y**	**Including <1y**
n	234	129	284
Engel 1	139	82	167
Sensitivity	96% (93% - 98%)	96% (91% - 99%)	96% (93% - 98%)
Specificity	19% (14% - 25%)	19% (13% - 27%)	21% (16% - 26%)
PPV	64% (57% - 70%)	68% (59% - 75%)	63.39% (57.46% - 68.95%)
NPV	78% (72% - 83%)	75% (66% - 82%)	80.00% (74.77% - 84.43%)
DOR	6.3 (2.2 - 17.5)	6.2 (1.6 - 24.4)	6.9 (2.7 - 17.6)
PLR	1.2 (0.9 - 1.5)	1.2 (0.8 - 1.7)	1.2 (1.0 - 1.5)
NLR	0.2 (0.2 - 0.2)	0.2 (0.1 - 0.3)	0.2 (0.1 - 0.2)
Engel 1a	97	51	122
Sensitivity	98% (95% - 99%)	98% (93% - 100%)	98% (95% - 99%)
Specificity	15% (11% - 21%)	14% (89% - 21%)	17% (13% - 22%)
PPV	45% (39% - 52%)	43% (34% - 52%)	47% (41% - 53%)
NPV	91% (87% - 95%)	92% (85% - 96%)	90% (86% - 93%)
DOR	8.6 (2.0 - 37.6)	8.2 (1.0 - 65.7)	7.9 (2.4 - 26.8)
PLR	1.2 (1.0 - 1.4)	1.1 (0.9 - 1.5)	1.2 (1.0 - 1.4)
NLR	0.1 (0.1 - 0.2)	0.1 (0.1 - 0.2)	0.2 (0.1 - 0.2)

Supplementary table 5: Parameters of diagnostic accuracy of complete or extended lesionectomy for a seizure free outcome (Engel 1 and Engel 1A). All lesional cases were considered, irrespective of IEDs on MEG. PPV, NPV – positive, negative predictive value; DOR – diagnostic odds ratio; PLR, NLR – positive, negative likelihood ratio.

Lesionectomies in cases with MEG resection data	
Follow-up	**All (Including <1y)**
n	134
Engel 1	84
Sensitivity	96% (91% - 99%)
Specificity	8% (4% - 14%)
PPV	64% (55% - 72%)
NPV	57% (48% - 66%)
DOR	2.4 (0.5 – 11.0)
PLR	1.1 (0.5 - 2.0)
NLR	0.5 (0.2 - 0.9)
Engel 1a	57
Sensitivity	98% (94% - 100%)
Specificity	8% (4% - 14%)
PPV	44% (36% - 53%)
NPV	86% (78% - 91%)
DOR	4.7 (0.6 - 40.5)
PLR	1.1 (0.7 - 1.5)
NLR	0.2 (0.2 - 0.3)

Supplementary table 6: Parameters of diagnostic accuracy of complete or extended lesionectomy for a seizure free outcome (Engel 1 and Engel 1A) at the last available outcome, including early outcomes <1 year. Only cases with IEDs on MEG and information on MEG resection were considered, corresponding to table 2. Nc – not computable due to zeros in the denominator, etc. PPV, NPV – positive, negative predictive value; DOR – diagnostic odds ratio; PLR, NLR – positive, negative likelihood ratio.