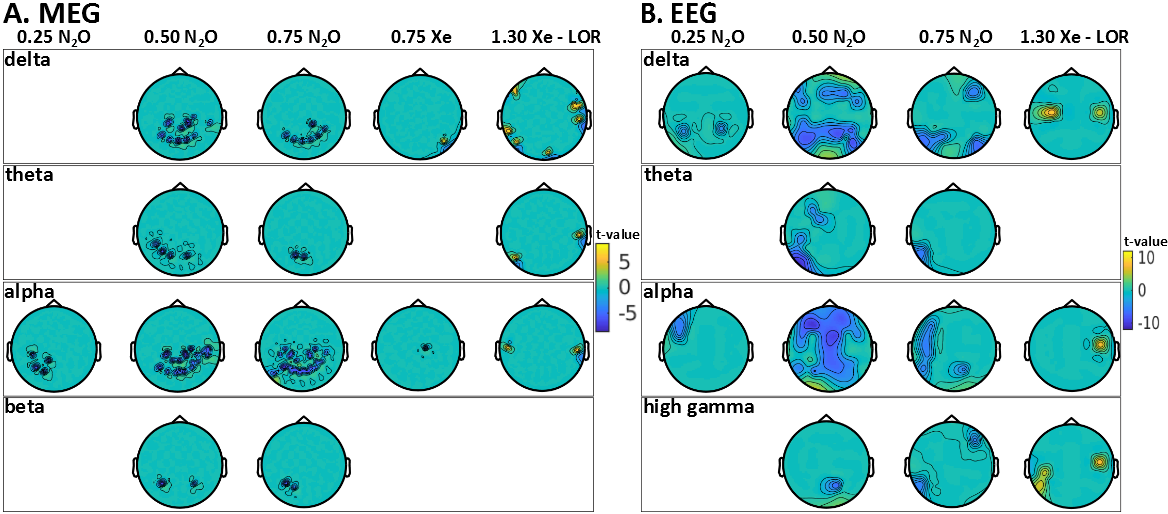
**Supplementary Digital Content 2**

*Group Sensor Level Power Analysis.* Pre-processed data (as described in the methods) were used in the source level were used to evaluate sensor level changes as follows. Group sensor level power calculations were statistically assessed at each frequency band first, within gases and across the baselines and step-wise gas concentrations and second, across gases and within the baselines and equivalent MAC-awake gas concentrations. The statistical method utilized here was a Non-Parametric Group Statistics approach proposed by Nichols and Holmes,1,2 which has been subsequently used by countless research groups, particularly pertaining to BOLD-fMRI statistical analysis as well as more recently in magnetoencephalography statistical analysis (*e.g*. 3,4).

For the within gas comparison, a two-sample t-statistic calculation was performed within each frequency band, gas and subject, by contrasting all valid trials within a sensor at each of the pre-antiemetic baselines and gas levels to all trials within a sensor for the post-antiemetic baseline. The resulting student’s t-statistic maps of the sensor power for all sensors were tested against the null hypothesis that the distribution of a given condition in either Xe or N2O isn’t significantly different to the post-antiemetic baseline. In order to correct for multiple comparisons across the magnetoencephalography and electroencephalography sensors, a null distribution was computed using 5000 permutations of the t-statistic sign at each sensor and across participants.5 Calculation of one-sample t-tests was performed across individuals. Maximum statistics with significance set at p=0.050 were performed under the omnibus null hypothesis that if changes at each permutation were not significant at the sensors with the highest and lowest t-statistic values then none of the remaining sensors should have significant changes. This method allowed for the correction of multiple comparisons problem across sensors. Finally, in order to correct for the multiple comparisons performed across conditions, Bonferroni-Holm corrections were used, resulting in a t-statistic threshold with significance set at p=0.004 for the Xe conditions and p=0.005 for the N2O conditions (p=0.025 to allow for two tailed comparison of increases and decreases in power; p=0.025/6 and p=0.025/5 to correct for the six Xe and five N2O condition comparisons, respectively).

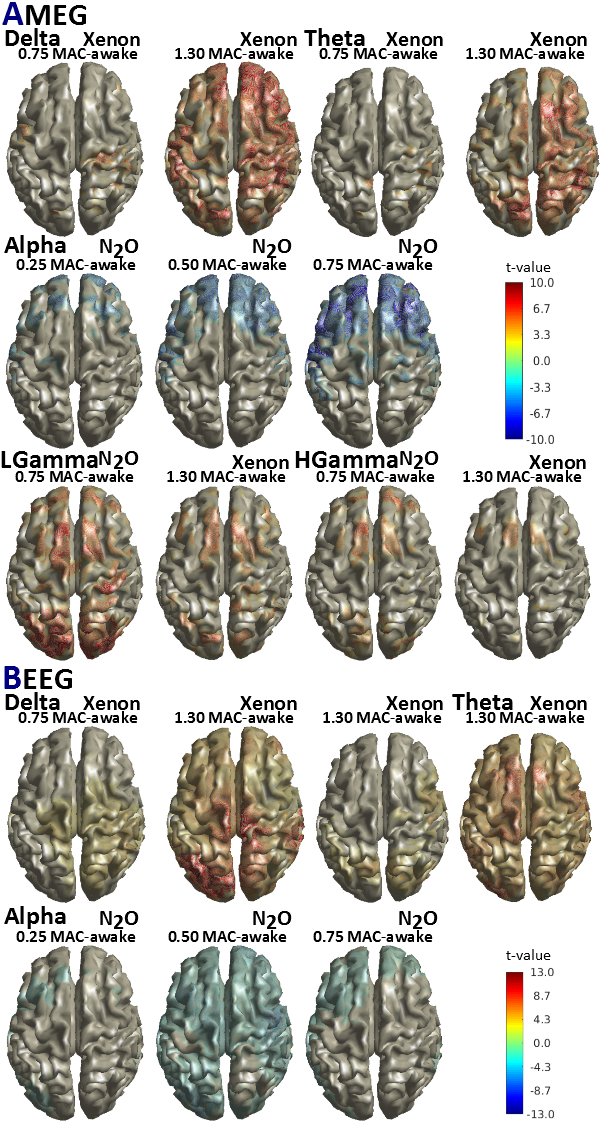
Group t-statistic maps for the sensor level comparison of gas levels relative to the conscious post-antiemetic baseline for both magnetoencephalography and electroencephalography datasets are shown in Supp. Figure 2A and summarized in Supp. Table 2A. Results revealed agent specific alterations and importantly, modality specific alterations in sensor absolute power. Low frequency delta, theta and alpha activity was similarly altered in electroencephalography and magnetoencephalography sensors and reflected spectral power results. In contrast, high frequency changes were minimal at the sensor level and showed a deviating pattern across modalities and agents, magnetoencephalography recordings yielding minor significant effects in the N2O beta band whereas only high gamma electroencephalography was significantly altered in increasing gas concentrations of both N2O and Xe.

*Supp. Figure 2A. Group sensor level changes in step-wise increasing Xenon and Nitrous Oxide inhalation.* Maximum statistic and Bonferroni corrected t-statistic topomaps with significant changes (Xe: p=0.004; N2O: p=0.005) for 0.25, 0.50, 0.75 MAC-awake Nitrous Oxide (N2O) and Xenon (Xe) and loss of responsiveness (LOR) at 1.30 MAC-awake Xe relative to the post-antiemetic baseline for the 306 magnetoencephalography channels (MEG - A) and 64 electroencephalography channels (EEG - B). Note the different level of significance in MEG (absolute maximum and minimum t-value = 8.70) and EEG (absolute maximum and minimum t-value = 11.99). [delta (1-4 Hz), theta (4-8 Hz), alpha (8-13 Hz), beta (13-30 Hz), high gamma (51-99 Hz)].

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 0.25 MAC-awake | | 0.50 MAC-awake | | 0.75 MAC-awake | | 1.30 MAC-awake (LOR) | |
|  | MEG | EEG | MEG | EEG | MEG | EEG | MEG | EEG |
| Delta |  | N2O: decreased parietal, occipital power |  | N2O: globally decreased and frontal, occipital increased power | N2O: decreased parietal power | N2O: decreased frontal, occipital power | Xe: increased anterior, posterior power | Xe: increased frontal power |
| Theta |  | | N2O: decreased frontal, parietal power | | N2O: decreased frontal, parietal power  Xe: minor increased central/peripheral sensor power | | Xe: minor increased central/peripheral sensor power | |
| Alpha | N2O: increased posterior power | | N2O: more widespread increased posterior power than 0.25 MAC-awake | N2O: more widespread increased posterior power than 0.25,0.75 MAC-awake | N2O: more widespread increased posterior power  than 0.25, 0.50 MAC-awake | N2O: more widespread increased posterior power  than 0.25, MAC-awake |  | |
| Beta |  | | N2O: decreased parietal power |  | N2O: decreased parietal power |  |  | |
| High Gamma |  | |  | N2O: decreased parietal power |  | N2O: decreased frontal, parietal power |  | Xe: increased central power |

*Supp. Table 2A. Summary of significant alterations in step-wise increasing Xenon and Nitrous Oxide gaseous administration.* Maximum statistic and Bonferroni corrected t-statistic significant (Xenon (Xe): p=0.004; Nitrous Oxide (N2O): p=0.005) increases (in red ink) and decreases (in blue ink) for 0.25, 0.50, 0.75 MAC-awake N2O and Xe and LOR at 1.30 MAC-awake Xe relative to the post-antiemetic baseline for the 306 magnetoencephalography channels (MEG) and 64 electroencephalography channels (EEG). [delta (1-4 Hz), theta (4-8 Hz), alpha (8-13 Hz), beta (13-30 Hz), high gamma (51-99 Hz)].

*Group Source Level Power Analysis.* Significant maximum statistics (p=0.025) corrected t-statistic maps of the power changes relative to baseline across subjects that demonstrate trends in the data with increasing gas concentration [0.25, 0.50, 0.75 MAC-awake for Xe, N2O and 1.30 MAC-awake (loss of responsiveness) for Xe] in magnetoencephalography and electroencephalography datasets are shown in Supp. Figure 2B.

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*Supp. Figure 2B.* *Group level source power t-statistic maps under increasing doses of Xenon and Nitrous Oxide relative to post-antiemetic baseline (baseline 3).* Maximum statistics corrected (without subsequent Bonferroni correction) t-values reveal significant (p<0.025) changes in the delta, theta and alpha bands in both magnetoencephalogram (A) and electroencephalogram (B) results for different gas concentrations (0.25, 0.50, 0.75, 1.30 MAC-awake). High frequency power (Lgamma, Hgamma) is only significantly altered for MEG data and only for the highest administered gas concentrations. The difference in scale between A and B should be noted. [delta (1-4 Hz), theta (4-8 Hz), alpha (8-13 Hz), Lgamma: low gamma (30-49 Hz), Hgamma: high gamma (51-99 Hz)].

Highly significant (Xe: p=0.004 ; N2O: p=0.005) power changes for the two gases in increasing gas levels contrasted to the post-antiemetic baseline reveal region specific changes in each frequency band investigate. Supp. Tables 2B and 2C give a full account of all significantly altered regions relative to baseline.

*Supp. Table 2B. Magnetoencephalographic sources most significantly altered by Xenon and Nitrous Oxide administration.* Significantly (p<0.005 for Nitrous Oxide (N2O); p<0.004 for Xenon (Xe)) altered regions relative to post-antiemetic baseline for each frequency band. Voxel coordinates are in Automated Anatomical Labeling (AAL) Atlas atlas coordinate system along with associated labels6. [delta (1-4 Hz), theta (4-8 Hz), alpha (8-13 Hz), low gamma (30-49 Hz), high gamma (51-99 Hz)].

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Delta**  **MAC-awake Level** | | **Region of Interest** | | | | **Voxel Coordinate** | | | | | | **t-value** | | **p-value** | | | | |
| 1.30 Xenon | | Parietal\_Inf\_R | | | | 54 -42 48 | | | | | | 9.61 | | 0.0001 | | | | |
|  | | Precentral\_R | | | | 54 6 42 | | | | | | 9.36 | | 0.0002 | | | | |
|  | | Cingulum\_Ant\_R | | | | 6 48 24 | | | | | | 9.36 | | 0.0002 | | | | |
|  | | Frontal\_Sup\_Medial\_L | | | | 0 54 24 | | | | | | 9.25 | | 0.0002 | | | | |
|  | | Frontal\_Sup\_Medial\_R | | | | 12 48 24 | | | | | | 9.13 | | 0.0002 | | | | |
|  | | Precuneus\_L | | | | 0 -48 54 | | | | | | 9.13 | | 0.0002 | | | | |
|  | | Frontal\_Sup\_R | | | | 18 54 30 | | | | | | 9.11 | | 0.0002 | | | | |
|  | | Fusiform\_R | | | | 48 -66 -18 | | | | | | 8.82 | | 0.0002 | | | | |
|  | | Frontal\_Mid\_R | | | | 48 24 36 | | | | | | 8.80 | | 0.0002 | | | | |
|  | | Temporal\_Inf\_R | | | | 48 -66 -12 | | | | | | 8.47 | | 0.0002 | | | | |
|  | | Temporal\_Inf\_L | | | | -54 -60 -12 | | | | | | 8.45 | | 0.0002 | | | | |
|  | | Cuneus\_L | | | | -18 -72 36 | | | | | | 8.34 | | 0.0002 | | | | |
|  | | SupraMarginal\_L | | | | -54 -30 24 | | | | | | 8.32 | | 0.0002 | | | | |
|  | | Cingulum\_Mid\_R | | | | 6 42 30 | | | | | | 8.27 | | 0.0002 | | | | |
|  | | Frontal\_Inf\_Oper\_R | | | | 54 12 12 | | | | | | 8.13 | | 0.0002 | | | | |
|  | | Frontal\_Sup\_L | | | | -12 48 42 | | | | | | 8.08 | | 0.0002 | | | | |
|  | | Postcentral\_L | | | | -60 -18 30 | | | | | | 8.08 | | 0.0002 | | | | |
|  | | Frontal\_Med\_Orb\_R | | | | 6 54 -6 | | | | | | 7.92 | | 0.0004 | | | | |
|  | | Precuneus\_R | | | | 6 -48 54 | | | | | | 7.88 | | 0.0004 | | | | |
|  | | SupraMarginal\_R | | | | 42 -42 42 | | | | | | 7.85 | | 0.0004 | | | | |
|  | | Occipital\_Mid\_L | | | | -24 -72 30 | | | | | | 7.76 | | 0.0004 | | | | |
|  | | Postcentral\_R | | | | 42 -30 60 | | | | | | 7.73 | | 0.0004 | | | | |
|  | | Precentral\_L | | | | -48 -6 42 | | | | | | 7.71 | | 0.0004 | | | | |
|  | | Parietal\_Inf\_L | | | | -54 -36 42 | | | | | | 7.65 | | 0.0004 | | | | |
|  | | Parietal\_Sup\_R | | | | 30 -48 60 | | | | | | 7.61 | | 0.0004 | | | | |
|  | | Frontal\_Inf\_Tri\_R | | | | 48 24 30 | | | | | | 7.60 | | 0.0004 | | | | |
|  | | Paracentral\_Lobule\_R | | | | 12 -30 66 | | | | | | 7.60 | | 0.0004 | | | | |
|  | | Occipital\_Sup\_L | | | | -24 -72 36 | | | | | | 7.49 | | 0.0004 | | | | |
|  | | Occipital\_Inf\_L | | | | -24 -96 -6 | | | | | | 7.43 | | 0.0004 | | | | |
|  | | Frontal\_Mid\_Orb\_R | | | | 36 48 -6 | | | | | | 7.41 | | 0.0004 | | | | |
|  | | Thalamus\_R | | | | 6 -18 6 | | | | | | 7.31 | | 0.0004 | | | | |
|  | | Supp\_Motor\_Area\_R | | | | 12 -18 66 | | | | | | 7.28 | | 0.0004 | | | | |
|  | | Angular\_R | | | | 54 -54 36 | | | | | | 7.18 | | 0.0004 | | | | |
|  | | Cingulum\_Ant\_L | | | | 0 36 0 | | | | | | 7.17 | | 0.0004 | | | | |
|  | | Frontal\_Med\_Orb\_L | | | | 0 60 -6 | | | | | | 7.13 | | 0.0004 | | | | |
|  | | Temporal\_Sup\_L | | | | -54 -30 18 | | | | | | 7.03 | | 0.0006 | | | | |
|  | | Frontal\_Inf\_Oper\_L | | | | -54 6 12 | | | | | | 7.02 | | 0.0006 | | | | |
|  | | Occipital\_Inf\_R | | | | 42 -66 -12 | | | | | | 7.00 | | 0.0006 | | | | |
|  | | Occipital\_Mid\_R | | | | 30 -84 36 | | | | | | 6.98 | | 0.0006 | | | | |
|  | | Calcarine\_L | | | | -18 -102 -6 | | | | | | 6.94 | | 0.0006 | | | | |
|  | | Supp\_Motor\_Area\_L | | | | -12 6 66 | | | | | | 6.90 | | 0.0006 | | | | |
|  | | Rolandic\_Oper\_R | | | | 60 -18 18 | | | | | | 6.89 | | 0.0006 | | | | |
|  | | Temporal\_Mid\_L | | | | -48 -66 6 | | | | | | 6.84 | | 0.0006 | | | | |
|  | | Frontal\_Sup\_Orb\_L | | | | -18 42 -18 | | | | | | 6.82 | | 0.0006 | | | | |
|  | | Calcarine\_R | | | | 18 -90 0 | | | | | | 6.79 | | 0.0008 | | | | |
|  | | Occipital\_Sup\_R | | | | 24 -84 30 | | | | | | 6.75 | | 0.0010 | | | | |
|  | | Paracentral\_Lobule\_L | | | | -6 -30 54 | | | | | | 6.74 | | 0.0010 | | | | |
|  | | Parietal\_Sup\_L | | | | -24 -72 42 | | | | | | 6.72 | | 0.0010 | | | | |
|  | | Temporal\_Sup\_R | | | | 54 -30 18 | | | | | | 6.64 | | 0.0014 | | | | |
|  | | Fusiform\_L | | | | -42 -72 -18 | | | | | | 6.61 | | 0.0014 | | | | |
|  | | Frontal\_Inf\_Orb\_R | | | | 30 36 -12 | | | | | | 6.57 | | 0.0014 | | | | |
|  | | Thalamus\_L | | | | -6 -12 12 | | | | | | 6.57 | | 0.0014 | | | | |
|  | | Cingulum\_Mid\_L | | | | 0 -42 48 | | | | | | 6.56 | | 0.0014 | | | | |
|  | | Frontal\_Mid\_Orb\_L | | | | -42 54 -6 | | | | | | 6.53 | | 0.0016 | | | | |
|  | | Rolandic\_Oper\_L | | | | -48 -24 18 | | | | | | 6.45 | | 0.0016 | | | | |
|  | | Frontal\_Inf\_Orb\_L | | | | -42 42 -12 | | | | | | 6.43 | | 0.0016 | | | | |
|  | | Cuneus\_R | | | | 18 -84 24 | | | | | | 6.43 | | 0.0016 | | | | |
|  | | Frontal\_Mid\_L | | | | -30 54 24 | | | | | | 6.36 | | 0.0016 | | | | |
|  | | Frontal\_Sup\_Orb\_R | | | | 30 60 -6 | | | | | | 6.35 | | 0.0016 | | | | |
|  | | Rectus\_R | | | | 12 48 -18 | | | | | | 6.25 | | 0.0022 | | | | |
|  | | Temporal\_Mid\_R | | | | 54 -42 -12 | | | | | | 6.18 | | 0.0026 | | | | |
|  | | Insula\_L | | | | -42 18 0 | | | | | | 6.16 | | 0.0026 | | | | |
|  | | Lingual\_R | | | | 24 -90 -6 | | | | | | 6.16 | | 0.0026 | | | | |
|  | | Frontal\_Inf\_Tri\_L | | | | -36 24 18 | | | | | | 6.08 | | 0.0028 | | | | |
|  | | Angular\_L | | | | -54 -66 24 | | | | | | 6.08 | | 0.0028 | | | | |
| 0.75 N2O | | SupraMarginal\_R | | | | 48 -36 36 | | | | | | 7.26 | | 0.0007 | | | | |
|  | | Parietal\_Inf\_R | | | | 54 -36 48 | | | | | | 7.20 | | 0.0008 | | | | |
|  | | Postcentral\_R | | | | 36 -30 42 | | | | | | 6.80 | | 0.0012 | | | | |
|  | | Precuneus\_R | | | | 18 -60 42 | | | | | | 6.70 | | 0.0014 | | | | |
|  | | Precentral\_R | | | | 30 -24 60 | | | | | | 6.65 | | 0.0014 | | | | |
|  | | Occipital\_Sup\_R | | | | 24 -66 36 | | | | | | 6.63 | | 0.0014 | | | | |
|  | | Postcentral\_L | | | | -60 -18 30 | | | | | | 6.48 | | 0.0016 | | | | |
|  | | Parietal\_Sup\_R | | | | 24 -60 48 | | | | | | 6.41 | | 0.0018 | | | | |
|  | | Cuneus\_R | | | | 18 -72 36 | | | | | | 6.34 | | 0.0018 | | | | |
|  | | Occipital\_Mid\_L | | | | -24 -78 36 | | | | | | 6.27 | | 0.0018 | | | | |
|  | | Precentral\_L | | | | -48 0 36 | | | | | | 6.21 | | 0.0018 | | | | |
|  | | Cuneus\_L | | | | -18 -78 36 | | | | | | 6.07 | | 0.0026 | | | | |
|  | | Precuneus\_L | | | | 0 -48 54 | | | | | | 5.99 | | 0.0026 | | | | |
|  | | Angular\_R | | | | 42 -54 36 | | | | | | 5.97 | | 0.0026 | | | | |
|  | | Occipital\_Sup\_L | | | | -18 -78 30 | | | | | | 5.78 | | 0.0040 | | | | |
| **Theta**  **MAC-awake Level** | | **Region of Interest** | | | | | **Voxel Coordinate** | | | **t-value** | | | | | | | | **p-value** | | |
| 1.30 Xenon | | Parietal\_Sup\_L | | | | | -30 -66 48 | | | 8.52 | | | | | | | | 0.0003 | | |
|  | | Precuneus\_L | | | | | -6 -78 54 | | | 8.40 | | | | | | | | 0.0004 | | |
|  | | SupraMarginal\_R | | | | | 60 -30 24 | | | 8.32 | | | | | | | | 0.0004 | | |
|  | | Paracentral\_Lobule\_R | | | | | 6 -42 60 | | | 8.22 | | | | | | | | 0.0004 | | |
|  | | Frontal\_Sup\_R | | | | | 24 24 60 | | | 8.20 | | | | | | | | 0.0004 | | |
|  | | Parietal\_Sup\_R | | | | | 18 -60 54 | | | 8.15 | | | | | | | | 0.0004 | | |
|  | | Precuneus\_R | | | | | 12 -66 42 | | | 8.09 | | | | | | | | 0.0004 | | |
|  | | Postcentral\_R | | | | | 12 -36 66 | | | 8.08 | | | | | | | | 0.0004 | | |
|  | | Cuneus\_L | | | | | -6 -78 36 | | | 7.99 | | | | | | | | 0.0004 | | |
|  | | Occipital\_Sup\_L | | | | | -6 -84 48 | | | 7.81 | | | | | | | | 0.0006 | | |
|  | | Parietal\_Inf\_L | | | | | -30 -72 48 | | | 7.78 | | | | | | | | 0.0008 | | |
|  | | Precentral\_R | | | | | 60 -6 42 | | | 7.76 | | | | | | | | 0.0008 | | |
|  | | Parietal\_Inf\_R | | | | | 42 -48 42 | | | 7.73 | | | | | | | | 0.0008 | | |
|  | | Frontal\_Mid\_R | | | | | 24 18 54 | | | 7.69 | | | | | | | | 0.0008 | | |
|  | | Angular\_R | | | | | 42 -54 36 | | | 7.49 | | | | | | | | 0.0010 | | |
|  | | Cingulum\_Mid\_L | | | | | -6 -42 54 | | | 7.42 | | | | | | | | 0.0010 | | |
|  | | Temporal\_Sup\_R | | | | | 54 -30 18 | | | 7.38 | | | | | | | | 0.0010 | | |
|  | | Cuneus\_R | | | | | 18 -66 30 | | | 7.27 | | | | | | | | 0.0010 | | |
|  | | Frontal\_Mid\_Orb\_R | | | | | 36 48 -12 | | | 7.19 | | | | | | | | 0.0010 | | |
|  | | Supp\_Motor\_Area\_R | | | | | 12 18 54 | | | 7.17 | | | | | | | | 0.0012 | | |
|  | | Frontal\_Sup\_Medial\_R | | | | | 12 24 60 | | | 7.15 | | | | | | | | 0.0012 | | |
|  | | Paracentral\_Lobule\_L | | | | | -6 -30 54 | | | 7.02 | | | | | | | | 0.0014 | | |
|  | | Cingulum\_Mid\_R | | | | | 6 -12 48 | | | 6.82 | | | | | | | | 0.0016 | | |
|  | | Frontal\_Med\_Orb\_R | | | | | 6 42 -6 | | | 6.76 | | | | | | | | 0.0016 | | |
|  | | Occipital\_Sup\_R | | | | | 30 -66 42 | | | 6.69 | | | | | | | | 0.0016 | | |
|  | | Supp\_Motor\_Area\_L | | | | | 0 0 72 | | | 6.65 | | | | | | | | 0.0016 | | |
|  | | Temporal\_Pole\_Mid\_R | | | | | 54 6 -24 | | | 6.65 | | | | | | | | 0.0016 | | |
|  | | Occipital\_Mid\_R | | | | | 30 -66 36 | | | 6.46 | | | | | | | | 0.0020 | | |
|  | | Frontal\_Sup\_Medial\_L | | | | | 0 30 60 | | | 6.45 | | | | | | | | 0.0020 | | |
|  | | Frontal\_Inf\_Orb\_R | | | | | 42 48 -12 | | | 6.44 | | | | | | | | 0.0020 | | |
|  | | Frontal\_Sup\_L | | | | | -12 0 72 | | | 6.38 | | | | | | | | 0.0022 | | |
|  | | Temporal\_Pole\_Sup\_R | | | | | 48 12 -24 | | | 6.34 | | | | | | | | 0.0024 | | |
|  | | Frontal\_Sup\_Orb\_R | | | | | 18 54 -12 | | | 6.29 | | | | | | | | 0.0024 | | |
|  | | Pallidum\_R | | | | | 24 -6 6 | | | 6.21 | | | | | | | | 0.0024 | | |
|  | | Caudate\_R | | | | | 18 -6 18 | | | 6.20 | | | | | | | | 0.0024 | | |
|  | | Rolandic\_Oper\_R | | | | | 48 -30 18 | | | 6.19 | | | | | | | | 0.0024 | | |
|  | | Postcentral\_L | | | | | -18 -36 66 | | | 6.18 | | | | | | | | 0.0024 | | |
|  | | Frontal\_Inf\_Tri\_R | | | | | 36 30 24 | | | 6.14 | | | | | | | | 0.0024 | | |
|  | | Occipital\_Mid\_L | | | | | -24 -78 36 | | | 6.06 | | | | | | | | 0.0028 | | |
|  | | Thalamus\_R | | | | | 6 -18 12 | | | 6.05 | | | | | | | | 0.0028 | | |
|  | | Frontal\_Inf\_Oper\_R | | | | | 48 18 36 | | | 5.99 | | | | | | | | 0.0030 | | |
|  | | Calcarine\_L | | | | | 0 -96 12 | | | 5.95 | | | | | | | | 0.0032 | | |
|  | | Frontal\_Med\_Orb\_L | | | | | 0 42 -12 | | | 5.85 | | | | | | | | 0.0036 | | |
|  | | Angular\_L | | | | | -36 -66 42 | | | 5.76 | | | | | | | | 0.0036 | | |
|  | | Putamen\_R | | | | | 24 0 12 | | | 5.73 | | | | | | | | 0.0036 | | |
|  | | Cingulum\_Ant\_R | | | | | 6 36 0 | | | 5.72 | | | | | | | | 0.0038 | | |
|  | | Calcarine\_R | | | | | 12 -90 0 | | | 5.72 | | | | | | | | 0.0036 | | |
|  | | Temporal\_Mid\_R | | | | | 54 -66 18 | | | 5.70 | | | | | | | | 0.0040 | | |
| 0.75 Xenon | | Parietal\_Inf\_R | | | | | 54 -36 54 | | | 6.17 | | | | | | | | 0.0011 | | |
|  | | Precuneus\_L | | | | | -6 -54 60 | | | 5.98 | | | | | | | | 0.0012 | | |
|  | | SupraMarginal\_R | | | | | 48 -36 30 | | | 5.71 | | | | | | | | 0.0018 | | |
|  | | Postcentral\_R | | | | | 48 -30 54 | | | 5.68 | | | | | | | | 0.0026 | | |
| 0.25 Xenon | | Parietal\_Inf\_L | | | | | -36 -60 48 | | | 6.14 | | | | | | | | 0.0019 | | |
| **Alpha**  **MAC-awake Level** | | **Region of Interest** | | | | | **Voxel Coordinate** | | | **t-value** | | | | | **p-value** | | | | |
| 0.75 N2O | | Frontal\_Sup\_Medial\_L | | | | | 0 66 0 | | | -9.92 | | | | | 0.0001 | | | | |
|  | | Postcentral\_L | | | | | -60 -18 30 | | | -9.78 | | | | | 0.0002 | | | | |
|  | | Frontal\_Mid\_L | | | | | -42 54 6 | | | -9.70 | | | | | 0.0002 | | | | |
|  | | Frontal\_Inf\_Tri\_L | | | | | -48 36 18 | | | -9.60 | | | | | 0.0002 | | | | |
|  | | Rectus\_R | | | | | 6 36 -24 | | | -9.58 | | | | | 0.0002 | | | | |
|  | | Cingulum\_Ant\_L | | | | | 0 36 30 | | | -9.58 | | | | | 0.0002 | | | | |
|  | | SupraMarginal\_L | | | | | -60 -24 24 | | | -9.50 | | | | | 0.0002 | | | | |
|  | | Frontal\_Sup\_Orb\_R | | | | | 12 18 -18 | | | -9.38 | | | | | 0.0002 | | | | |
|  | | Cingulum\_Mid\_R | | | | | 6 36 36 | | | -9.21 | | | | | 0.0002 | | | | |
|  | | Olfactory\_R | | | | | 6 18 -18 | | | -9.14 | | | | | 0.0002 | | | | |
|  | | Rectus\_L | | | | | 0 24 -24 | | | -8.96 | | | | | 0.0002 | | | | |
|  | | Frontal\_Inf\_Orb\_R | | | | | 30 30 -24 | | | -8.83 | | | | | 0.0002 | | | | |
|  | | Frontal\_Sup\_Orb\_L | | | | | -12 36 -24 | | | -8.82 | | | | | 0.0002 | | | | |
|  | | Putamen\_L | | | | | -24 -6 12 | | | -8.72 | | | | | 0.0002 | | | | |
|  | | Temporal\_Sup\_L | | | | | -54 -30 18 | | | -8.65 | | | | | 0.0002 | | | | |
|  | | Frontal\_Med\_Orb\_R | | | | | 6 24 -12 | | | -8.64 | | | | | 0.0002 | | | | |
|  | | Frontal\_Inf\_Oper\_R | | | | | 48 12 18 | | | -8.62 | | | | | 0.0002 | | | | |
|  | | Frontal\_Mid\_Orb\_R | | | | | 24 36 -18 | | | -8.58 | | | | | 0.0002 | | | | |
|  | | Frontal\_Sup\_Medial\_R | | | | | 6 42 36 | | | -8.56 | | | | | 0.0002 | | | | |
|  | | Caudate\_R | | | | | 12 12 -12 | | | -8.46 | | | | | 0.0002 | | | | |
|  | | Frontal\_Sup\_L | | | | | -30 54 0 | | | -8.45 | | | | | 0.0002 | | | | |
|  | | Frontal\_Mid\_R | | | | | 36 54 0 | | | -8.44 | | | | | 0.0002 | | | | |
|  | | Rolandic\_Oper\_L | | | | | -48 -12 18 | | | -8.32 | | | | | 0.0002 | | | | |
|  | | Frontal\_Sup\_R | | | | | 24 36 36 | | | -8.24 | | | | | 0.0002 | | | | |
|  | | Precentral\_L | | | | | -54 6 24 | | | -8.23 | | | | | 0.0002 | | | | |
|  | | Insula\_R | | | | | 36 18 -12 | | | -8.23 | | | | | 0.0002 | | | | |
|  | | Frontal\_Inf\_Oper\_L | | | | | -48 12 18 | | | -8.09 | | | | | 0.0002 | | | | |
|  | | Insula\_L | | | | | -36 -12 18 | | | -8.06 | | | | | 0.0002 | | | | |
|  | | Temporal\_Pole\_Sup\_L | | | | | -48 12 -6 | | | -8.03 | | | | | 0.0002 | | | | |
|  | | Temporal\_Inf\_R | | | | | 54 -18 -30 | | | -7.75 | | | | | 0.0002 | | | | |
|  | | Fusiform\_L | | | | | -24 0 -42 | | | -7.70 | | | | | 0.0002 | | | | |
|  | | Temporal\_Pole\_Sup\_R | | | | | 30 24 -30 | | | -7.66 | | | | | 0.0002 | | | | |
|  | | Putamen\_R | | | | | 18 18 -6 | | | -7.65 | | | | | 0.0002 | | | | |
|  | | ParaHippocampal\_L | | | | | -24 -18 -24 | | | -7.57 | | | | | 0.0002 | | | | |
|  | | Frontal\_Inf\_Orb\_L | | | | | -18 24 -24 | | | -7.55 | | | | | 0.0002 | | | | |
|  | | Temporal\_Mid\_L | | | | | -60 -6 -18 | | | -7.55 | | | | | 0.0002 | | | | |
|  | | Hippocampus\_L | | | | | -18 -24 -12 | | | -7.53 | | | | | 0.0002 | | | | |
|  | | Frontal\_Mid\_Orb\_L | | | | | -18 30 -18 | | | -7.45 | | | | | 0.0002 | | | | |
|  | | Temporal\_Pole\_Mid\_L | | | | | -42 18 -30 | | | -7.43 | | | | | 0.0002 | | | | |
|  | | Olfactory\_L | | | | | -6 18 -18 | | | -7.34 | | | | | 0.0002 | | | | |
|  | | Parietal\_Inf\_L | | | | | -60 -36 42 | | | -7.33 | | | | | 0.0002 | | | | |
|  | | Frontal\_Inf\_Tri\_R | | | | | 42 12 24 | | | -7.32 | | | | | 0.0002 | | | | |
|  | | Temporal\_Mid\_R | | | | | 54 -12 -18 | | | -7.30 | | | | | 0.0002 | | | | |
|  | | Temporal\_Inf\_L | | | | | -60 -54 -6 | | | -7.14 | | | | | 0.0002 | | | | |
|  | | Caudate\_L | | | | | -18 0 18 | | | -7.01 | | | | | 0.0002 | | | | |
|  | | Cingulum\_Mid\_L | | | | | -6 -24 42 | | | -6.96 | | | | | 0.0002 | | | | |
|  | | Rolandic\_Oper\_R | | | | | 42 -12 18 | | | -6.94 | | | | | 0.0002 | | | | |
|  | | Frontal\_Med\_Orb\_L | | | | | -6 30 -12 | | | -6.90 | | | | | 0.0002 | | | | |
|  | | Fusiform\_R | | | | | 42 -72 -18 | | | -6.81 | | | | | 0.0002 | | | | |
|  | | Precentral\_R | | | | | 54 -6 48 | | | -6.79 | | | | | 0.0002 | | | | |
|  | | Pallidum\_R | | | | | 18 0 -6 | | | -6.73 | | | | | 0.0002 | | | | |
|  | | Temporal\_Pole\_Mid\_R | | | | | 42 18 -36 | | | -6.68 | | | | | 0.0002 | | | | |
|  | | Temporal\_Sup\_R | | | | | 60 0 -12 | | | -6.64 | | | | | 0.0002 | | | | |
|  | | Cingulum\_Ant\_R | | | | | 6 30 24 | | | -6.54 | | | | | 0.0004 | | | | |
|  | | Supp\_Motor\_Area\_R | | | | | 12 18 48 | | | -6.51 | | | | | 0.0004 | | | | |
|  | | Postcentral\_R | | | | | 60 -6 24 | | | -6.51 | | | | | 0.0004 | | | | |
|  | | Supp\_Motor\_Area\_L | | | | | -6 18 48 | | | -6.50 | | | | | 0.0004 | | | | |
|  | | ParaHippocampal\_R | | | | | 24 12 -30 | | | -6.47 | | | | | 0.0004 | | | | |
|  | | Thalamus\_L | | | | | -18 -12 6 | | | -6.31 | | | | | 0.0006 | | | | |
|  | | Hippocampus\_R | | | | | 18 6 12 | | | -5.97 | | | | | 0.0020 | | | | |
|  | | Amygdala\_L | | | | | -24 0 -24 | | | -5.93 | | | | | 0.0020 | | | | |
|  | | Amygdala\_R | | | | | 24 0 -12 | | | -5.93 | | | | | 0.0020 | | | | |
|  | | Occipital\_Inf\_R | | | | | 42 -72 -12 | | | -5.87 | | | | | 0.0022 | | | | |
|  | | Heschl\_L | | | | | -36 -24 12 | | | -5.87 | | | | | 0.0022 | | | | |
|  | | Lingual\_R | | | | | 42 -78 -18 | | | -5.84 | | | | | 0.0022 | | | | |
|  | | SupraMarginal\_R | | | | | 54 -12 24 | | | -5.82 | | | | | 0.0022 | | | | |
|  | | Thalamus\_R | | | | | 6 -12 0 | | | -5.82 | | | | | 0.0022 | | | | |
|  | | Pallidum\_L | | | | | -24 -6 0 | | | -5.79 | | | | | 0.0022 | | | | |
|  | | Heschl\_R | | | | | 42 -18 12 | | | -5.79 | | | | | 0.0022 | | | | |
|  | | Precuneus\_R | | | | | 24 -48 0 | | | -5.61 | | | | | 0.0030 | | | | |
|  | | Calcarine\_L | | | | | 0 -84 -12 | | | -5.60 | | | | | 0.0030 | | | | |
|  | | Paracentral\_Lobule\_L | | | | | -6 -24 54 | | | -5.58 | | | | | 0.0030 | | | | |
|  | | Occipital\_Inf\_L | | | | | -48 -72 -18 | | | -5.52 | | | | | 0.0036 | | | | |
|  | | Lingual\_L | | | | | -12 -90 -18 | | | -5.51 | | | | | 0.0036 | | | | |
|  | | Parietal\_Inf\_R | | | | | 48 -54 54 | | | -5.40 | | | | | 0.0042 | | | | |
| 0.50 N2O | | Postcentral\_L | | | | | -54 -18 30 | | | -7.23 | | | | | 0.0001 | | | | |
|  | | Rectus\_R | | | | | 6 36 -24 | | | -7.12 | | | | | 0.0002 | | | | |
|  | | Rectus\_L | | | | | -6 24 -24 | | | -6.98 | | | | | 0.0002 | | | | |
|  | | Frontal\_Sup\_Medial\_L | | | | | -12 54 0 | | | -6.82 | | | | | 0.0004 | | | | |
|  | | Frontal\_Inf\_Tri\_L | | | | | -48 36 18 | | | -6.81 | | | | | 0.0004 | | | | |
|  | | Frontal\_Sup\_L | | | | | -18 60 6 | | | -6.76 | | | | | 0.0006 | | | | |
|  | | Frontal\_Inf\_Tri\_R | | | | | 54 30 18 | | | -6.65 | | | | | 0.0006 | | | | |
|  | | Supp\_Motor\_Area\_L | | | | | -6 18 48 | | | -6.63 | | | | | 0.0006 | | | | |
|  | | Frontal\_Inf\_Oper\_L | | | | | -54 12 18 | | | -6.61 | | | | | 0.0006 | | | | |
|  | | SupraMarginal\_L | | | | | -60 -24 30 | | | -6.59 | | | | | 0.0006 | | | | |
|  | | Cingulum\_Ant\_L | | | | | -6 54 0 | | | -6.58 | | | | | 0.0006 | | | | |
|  | | Frontal\_Sup\_Orb\_R | | | | | 18 42 -24 | | | -6.57 | | | | | 0.0006 | | | | |
|  | | Frontal\_Inf\_Orb\_L | | | | | -42 36 -12 | | | -6.50 | | | | | 0.0006 | | | | |
|  | | Frontal\_Inf\_Oper\_R | | | | | 42 12 12 | | | -6.47 | | | | | 0.0006 | | | | |
|  | | Lingual\_L | | | | | -12 -90 -18 | | | -6.45 | | | | | 0.0006 | | | | |
|  | | Frontal\_Sup\_Orb\_L | | | | | -12 30 -24 | | | -6.44 | | | | | 0.0006 | | | | |
|  | | Frontal\_Mid\_L | | | | | -42 54 6 | | | -6.41 | | | | | 0.0006 | | | | |
|  | | Parietal\_Inf\_L | | | | | -60 -36 42 | | | -6.38 | | | | | 0.0006 | | | | |
|  | | Olfactory\_L | | | | | -6 18 -18 | | | -6.31 | | | | | 0.0010 | | | | |
|  | | Frontal\_Mid\_R | | | | | 30 18 54 | | | -6.26 | | | | | 0.0012 | | | | |
|  | | Caudate\_R | | | | | 18 24 6 | | | -6.26 | | | | | 0.0012 | | | | |
|  | | Frontal\_Mid\_Orb\_L | | | | | -24 60 -12 | | | -6.24 | | | | | 0.0012 | | | | |
|  | | Frontal\_Inf\_Orb\_R | | | | | 48 30 -12 | | | -6.17 | | | | | 0.0012 | | | | |
|  | | Frontal\_Sup\_Medial\_R | | | | | 6 60 6 | | | -6.13 | | | | | 0.0012 | | | | |
|  | | Temporal\_Pole\_Mid\_L | | | | | -36 18 -36 | | | -6.13 | | | | | 0.0012 | | | | |
|  | | Temporal\_Inf\_L | | | | | -42 6 -42 | | | -6.08 | | | | | 0.0016 | | | | |
|  | | Frontal\_Mid\_Orb\_R | | | | | 24 36 -18 | | | -6.05 | | | | | 0.0016 | | | | |
|  | | Insula\_R | | | | | 36 12 12 | | | -6.04 | | | | | 0.0016 | | | | |
|  | | Insula\_L | | | | | -36 -12 18 | | | -6.00 | | | | | 0.0016 | | | | |
|  | | Rolandic\_Oper\_L | | | | | -42 -18 18 | | | -5.98 | | | | | 0.0016 | | | | |
|  | | Rolandic\_Oper\_R | | | | | 42 6 12 | | | -5.98 | | | | | 0.0016 | | | | |
|  | | Cingulum\_Ant\_R | | | | | 12 42 6 | | | -5.93 | | | | | 0.0016 | | | | |
|  | | Frontal\_Med\_Orb\_L | | | | | -6 60 -6 | | | -5.88 | | | | | 0.0016 | | | | |
|  | | Fusiform\_L | | | | | -24 0 -42 | | | -5.87 | | | | | 0.0016 | | | | |
|  | | Temporal\_Pole\_Sup\_L | | | | | -36 18 -30 | | | -5.87 | | | | | 0.0016 | | | | |
|  | | Frontal\_Sup\_R | | | | | 18 42 42 | | | -5.78 | | | | | 0.0018 | | | | |
|  | | SupraMarginal\_R | | | | | 60 -36 24 | | | -5.67 | | | | | 0.0024 | | | | |
|  | | Frontal\_Med\_Orb\_R | | | | | 12 36 -12 | | | -5.65 | | | | | 0.0024 | | | | |
|  | | Calcarine\_L | | | | | 0 -84 -12 | | | -5.64 | | | | | 0.0024 | | | | |
|  | | Cingulum\_Mid\_R | | | | | 12 18 42 | | | -5.63 | | | | | 0.0024 | | | | |
|  | | Rectus\_L | | | | | 0 24 -24 | | | -5.62 | | | | | 0.0033 | | | | |
|  | | Fusiform\_R | | | | | 42 -66 -18 | | | -5.60 | | | | | 0.0030 | | | | |
|  | | Postcentral\_R | | | | | 54 -18 30 | | | -5.52 | | | | | 0.0036 | | | | |
|  | | Precentral\_L | | | | | -42 -6 30 | | | -5.46 | | | | | 0.0040 | | | | |
|  | | Caudate\_L | | | | | -6 12 -12 | | | -5.43 | | | | | 0.0040 | | | | |
|  | | ParaHippocampal\_L | | | | | -18 0 -36 | | | -5.42 | | | | | 0.0042 | | | | |
|  | | Supp\_Motor\_Area\_R | | | | | 12 18 48 | | | -5.39 | | | | | 0.0046 | | | | |
|  | | Temporal\_Mid\_R | | | | | 60 -36 -6 | | | -5.35 | | | | | 0.0050 | | | | |
| 0.25 N2O | | Fusiform\_R | | | | | 36 -72 -18 | | | -6.92 | | | | | 0.0003 | | | | |
|  | | Frontal\_Mid\_R | | | | | 42 54 12 | | | -6.51 | | | | | 0.0006 | | | | |
|  | | Frontal\_Sup\_L | | | | | -18 66 12 | | | -6.15 | | | | | 0.0006 | | | | |
|  | | Frontal\_Sup\_Medial\_L | | | | | -12 66 12 | | | -5.94 | | | | | 0.0008 | | | | |
|  | | Rectus\_L | | | | | 0 36 -24 | | | -5.84 | | | | | 0.0008 | | | | |
|  | | Calcarine\_L | | | | | 0 -84 -12 | | | -5.78 | | | | | 0.0008 | | | | |
|  | | Postcentral\_L | | | | | -60 -18 30 | | | -5.76 | | | | | 0.0008 | | | | |
|  | | Parietal\_Inf\_L | | | | | -60 -36 42 | | | -5.76 | | | | | 0.0008 | | | | |
|  | | Frontal\_Sup\_R | | | | | 24 42 48 | | | -5.72 | | | | | 0.0008 | | | | |
|  | | Frontal\_Sup\_Medial\_R | | | | | 6 60 0 | | | -5.71 | | | | | 0.0010 | | | | |
|  | | SupraMarginal\_L | | | | | -60 -36 36 | | | -5.63 | | | | | 0.0016 | | | | |
|  | | Frontal\_Mid\_L | | | | | -30 36 48 | | | -5.62 | | | | | 0.0016 | | | | |
|  | | Frontal\_Sup\_Orb\_R | | | | | 18 36 -24 | | | -5.58 | | | | | 0.0018 | | | | |
|  | | Frontal\_Med\_Orb\_L | | | | | 0 36 -12 | | | -5.57 | | | | | 0.0018 | | | | |
|  | | Frontal\_Inf\_Tri\_L | | | | | -42 24 24 | | | -5.49 | | | | | 0.0020 | | | | |
|  | | Frontal\_Sup\_Orb\_L | | | | | -12 24 -24 | | | -5.45 | | | | | 0.0024 | | | | |
|  | | Frontal\_Inf\_Oper\_R | | | | | 54 12 6 | | | -5.41 | | | | | 0.0026 | | | | |
|  | | Frontal\_Inf\_Orb\_R | | | | | 24 24 -18 | | | -5.41 | | | | | 0.0026 | | | | |
|  | | Frontal\_Mid\_Orb\_L | | | | | -36 54 -12 | | | -5.38 | | | | | 0.0028 | | | | |
|  | | Cingulum\_Ant\_L | | | | | -6 42 0 | | | -5.38 | | | | | 0.0028 | | | | |
|  | | Frontal\_Med\_Orb\_R | | | | | 12 60 -12 | | | -5.37 | | | | | 0.0028 | | | | |
|  | | Temporal\_Mid\_L | | | | | -60 -12 -24 | | | -5.34 | | | | | 0.0030 | | | | |
|  | | Temporal\_Mid\_R | | | | | 60 -12 -24 | | | -5.33 | | | | | 0.0030 | | | | |
|  | | Rectus\_R | | | | | 6 42 -24 | | | -5.32 | | | | | 0.0032 | | | | |
|  | | Supp\_Motor\_Area\_R | | | | | 6 -12 60 | | | -5.31 | | | | | 0.0032 | | | | |
|  | | Frontal\_Mid\_Orb\_R | | | | | 24 36 -18 | | | -5.27 | | | | | 0.0040 | | | | |
|  | | Supp\_Motor\_Area\_L | | | | | 0 12 48 | | | -5.23 | | | | | 0.0042 | | | | |
|  | | Cingulum\_Ant\_R | | | | | 12 42 0 | | | -5.23 | | | | | 0.0044 | | | | |
|  | | Temporal\_Pole\_Mid\_L | | | | | -36 18 -36 | | | -5.23 | | | | | 0.0042 | | | | |
|  | | Temporal\_Inf\_R | | | | | 54 -18 -30 | | | -5.23 | | | | | 0.0042 | | | | |
|  | | Olfactory\_L | | | | | -6 24 -12 | | | -5.20 | | | | | 0.0050 | | | | |
| **Beta**  **MAC-awake Level** | | **Region of Interest** | | **Voxel Coordinate** | | **t-value** | | | | **p-value** | | | |
| 1.30 Xenon | | Postcentral\_R | | 48 -30 54 | | 7.51 | | | | 0.0005 | | | |
|  | | SupraMarginal\_R | | 60 -48 36 | | 7.17 | | | | 0.0008 | | | |
|  | | Parietal\_Inf\_R | | 48 -36 54 | | 6.78 | | | | 0.0008 | | | |
|  | | Parietal\_Sup\_L | | -30 -66 48 | | 6.77 | | | | 0.0008 | | | |
|  | | Parietal\_Inf\_L | | -60 -48 36 | | 6.62 | | | | 0.0012 | | | |
|  | | Cuneus\_L | | -12 -84 30 | | 6.50 | | | | 0.0014 | | | |
|  | | Cuneus\_R | | 12 -84 36 | | 6.47 | | | | 0.0014 | | | |
|  | | Parietal\_Sup\_R | | 18 -54 60 | | 6.47 | | | | 0.0014 | | | |
|  | | Angular\_L | | -36 -60 42 | | 6.35 | | | | 0.0014 | | | |
|  | | Occipital\_Sup\_R | | 18 -84 36 | | 6.34 | | | | 0.0014 | | | |
|  | | Angular\_R | | 54 -54 36 | | 6.33 | | | | 0.0014 | | | |
|  | | Occipital\_Sup\_L | | -18 -78 30 | | 6.24 | | | | 0.0014 | | | |
|  | | Temporal\_Inf\_L | | -54 -60 -24 | | 6.22 | | | | 0.0014 | | | |
|  | | Frontal\_Sup\_R | | 24 18 60 | | 5.98 | | | | 0.0028 | | | |
|  | | Frontal\_Mid\_R | | 36 24 30 | | 5.89 | | | | 0.0030 | | | |
|  | | Occipital\_Mid\_L | | -24 -78 36 | | 5.87 | | | | 0.0034 | | | |
| 0.75 Xenon | | Angular\_R | | 42 -54 36 | | 5.35 | | | | 0.0041 | | | |
| 0.25 Xenon | | Parietal\_Inf\_L | | -36 -60 48 | | 5.55 | | | | 0.0035 | | | |
| 0.75 N2O | | Postcentral\_R | | 42 -30 42 | | 6.06 | | | | 0.0023 | | | |
|  | | Precentral\_R | | 42 -18 54 | | 5.89 | | | | 0.0036 | | | |
|  | | Angular\_L | | -48 -66 42 | | 5.77 | | | | 0.0040 | | | |
|  | | Precuneus\_L | | -6 -60 48 | | 5.67 | | | | 0.0046 | | | |
| 0.50 N2O | | Postcentral\_R | | 42 -30 54 | | 5.63 | | | | 0.0049 | | | |
| **Low gamma**  **MAC-awake Level** | | **Region of Interest** | | | **Voxel Coordinate** | | | | **t-value** | | | **p-value** | | | | |
| 0.75 N2O | | Occipital\_Sup\_L | | | -12 -90 30 | | | | 9.58 | | | 0.0001 | | | | |
|  | | Occipital\_Mid\_R | | | 30 -90 18 | | | | 9.21 | | | 0.0002 | | | | |
|  | | Cuneus\_L | | | -6 -90 30 | | | | 9.02 | | | 0.0002 | | | | |
|  | | Calcarine\_R | | | 18 -90 6 | | | | 8.98 | | | 0.0002 | | | | |
|  | | Cuneus\_R | | | 18 -96 12 | | | | 8.89 | | | 0.0002 | | | | |
|  | | Occipital\_Sup\_R | | | 24 -84 12 | | | | 8.84 | | | 0.0002 | | | | |
|  | | Calcarine\_L | | | -18 -102 -6 | | | | 8.54 | | | 0.0002 | | | | |
|  | | Occipital\_Inf\_L | | | -24 -96 -6 | | | | 8.50 | | | 0.0002 | | | | |
|  | | Occipital\_Mid\_L | | | -30 -84 36 | | | | 8.42 | | | 0.0002 | | | | |
|  | | Postcentral\_R | | | 30 -36 66 | | | | 8.33 | | | 0.0002 | | | | |
|  | | Precuneus\_R | | | 6 -72 60 | | | | 8.25 | | | 0.0002 | | | | |
|  | | Angular\_L | | | -42 -60 36 | | | | 8.12 | | | 0.0002 | | | | |
|  | | Parietal\_Sup\_L | | | -18 -72 48 | | | | 7.98 | | | 0.0002 | | | | |
|  | | Lingual\_L | | | -24 -90 -18 | | | | 7.93 | | | 0.0002 | | | | |
|  | | Lingual\_R | | | 18 -96 -12 | | | | 7.77 | | | 0.0002 | | | | |
|  | | Occipital\_Inf\_R | | | 30 -96 -6 | | | | 7.55 | | | 0.0002 | | | | |
|  | | Parietal\_Inf\_L | | | -48 -60 42 | | | | 7.55 | | | 0.0002 | | | | |
|  | | Frontal\_Sup\_R | | | 24 0 66 | | | | 7.51 | | | 0.0002 | | | | |
|  | | Precuneus\_L | | | 0 -66 60 | | | | 7.51 | | | 0.0002 | | | | |
|  | | Supp\_Motor\_Area\_R | | | 12 6 72 | | | | 7.42 | | | 0.0006 | | | | |
|  | | Frontal\_Mid\_L | | | -24 18 60 | | | | 7.39 | | | 0.0006 | | | | |
|  | | Frontal\_Sup\_Medial\_L | | | -12 24 60 | | | | 7.38 | | | 0.0006 | | | | |
|  | | Frontal\_Sup\_L | | | -18 18 60 | | | | 7.37 | | | 0.0006 | | | | |
|  | | Angular\_R | | | 36 -72 42 | | | | 7.31 | | | 0.0006 | | | | |
|  | | Parietal\_Sup\_R | | | 36 -48 60 | | | | 7.25 | | | 0.0006 | | | | |
|  | | Supp\_Motor\_Area\_L | | | -12 18 60 | | | | 7.19 | | | 0.0006 | | | | |
|  | | Cingulum\_Mid\_L | | | 0 -12 36 | | | | 7.06 | | | 0.0006 | | | | |
|  | | Precentral\_R | | | 36 -24 66 | | | | 7.05 | | | 0.0006 | | | | |
|  | | Fusiform\_R | | | 30 -84 -6 | | | | 6.94 | | | 0.0006 | | | | |
|  | | Temporal\_Mid\_R | | | 54 -66 18 | | | | 6.69 | | | 0.0006 | | | | |
|  | | Cingulum\_Mid\_R | | | 0 -12 30 | | | | 6.54 | | | 0.0008 | | | | |
|  | | Frontal\_Mid\_R | | | 24 54 30 | | | | 6.53 | | | 0.0008 | | | | |
|  | | Frontal\_Inf\_Orb\_L | | | -30 42 -18 | | | | 6.52 | | | 0.0010 | | | | |
|  | | Paracentral\_Lobule\_L | | | -12 -18 72 | | | | 6.45 | | | 0.0010 | | | | |
|  | | Frontal\_Sup\_Medial\_R | | | 12 24 60 | | | | 6.41 | | | 0.0014 | | | | |
|  | | Temporal\_Mid\_L | | | -48 -66 18 | | | | 6.39 | | | 0.0014 | | | | |
|  | | Precentral\_L | | | -18 -12 72 | | | | 6.34 | | | 0.0014 | | | | |
|  | | Parietal\_Inf\_R | | | 36 -48 54 | | | | 6.32 | | | 0.0014 | | | | |
|  | | Frontal\_Mid\_Orb\_L | | | -30 42 -12 | | | | 6.24 | | | 0.0018 | | | | |
|  | | Frontal\_Med\_Orb\_L | | | -6 42 -12 | | | | 6.11 | | | 0.0024 | | | | |
|  | | Postcentral\_L | | | -24 -30 72 | | | | 5.97 | | | 0.0030 | | | | |
|  | | Cingulum\_Ant\_L | | | -6 24 30 | | | | 5.79 | | | 0.0044 | | | | |
|  | | SupraMarginal\_L | | | -60 -18 42 | | | | 5.76 | | | 0.0044 | | | | |
|  | | Frontal\_Inf\_Tri\_L | | | -48 24 12 | | | | 5.73 | | | 0.0048 | | | | |
| 0.50 N2O | | Cuneus\_L | | | -6 -90 30 | | | | 5.50 | | | 0.0043 | | | | |
| 1.30 Xenon | | Occipital\_Inf\_R | | | 24 -96 -6 | | | | 7.01 | | | 0.0007 | | | | |
|  | | Frontal\_Sup\_Medial\_R | | | 6 24 60 | | | | 6.87 | | | 0.0012 | | | | |
|  | | Supp\_Motor\_Area\_L | | | 0 24 66 | | | | 6.86 | | | 0.0012 | | | | |
|  | | Lingual\_R | | | 24 -90 -6 | | | | 6.80 | | | 0.0014 | | | | |
|  | | Calcarine\_R | | | 18 -96 -6 | | | | 6.68 | | | 0.0018 | | | | |
|  | | Angular\_L | | | -36 -66 42 | | | | 6.68 | | | 0.0018 | | | | |
|  | | Cuneus\_L | | | -12 -84 36 | | | | 6.61 | | | 0.0024 | | | | |
|  | | Occipital\_Sup\_L | | | -18 -84 36 | | | | 6.61 | | | 0.0024 | | | | |
|  | | Frontal\_Sup\_R | | | 18 18 66 | | | | 6.60 | | | 0.0026 | | | | |
|  | | Supp\_Motor\_Area\_R | | | 6 24 54 | | | | 6.59 | | | 0.0026 | | | | |
|  | | Frontal\_Sup\_Medial\_L | | | 0 30 60 | | | | 6.59 | | | 0.0026 | | | | |
|  | | Occipital\_Mid\_L | | | -24 -78 36 | | | | 6.59 | | | 0.0026 | | | | |
|  | | Parietal\_Inf\_L | | | -54 -48 36 | | | | 6.51 | | | 0.0026 | | | | |
|  | | Parietal\_Sup\_R | | | 18 -54 60 | | | | 6.40 | | | 0.0026 | | | | |
|  | | SupraMarginal\_R | | | 60 -48 36 | | | | 6.37 | | | 0.0030 | | | | |
|  | | Precentral\_R | | | 60 -6 42 | | | | 6.31 | | | 0.0034 | | | | |
|  | | Parietal\_Inf\_R | | | 54 -54 42 | | | | 6.31 | | | 0.0034 | | | | |
|  | | Cuneus\_R | | | 12 -84 36 | | | | 6.29 | | | 0.0036 | | | | |
|  | | Occipital\_Sup\_R | | | 18 -84 36 | | | | 6.29 | | | 0.0036 | | | | |
|  | | Occipital\_Inf\_L | | | -18 -96 -6 | | | | 6.25 | | | 0.0040 | | | | |
|  | | Fusiform\_R | | | 48 -72 -18 | | | | 6.23 | | | 0.0040 | | | | |
| 0.75 Xenon | | Precentral\_R | | | 60 -6 42 | | | | 6.19 | | | 0.0003 | | | | |
|  | | Postcentral\_R | | | 60 -6 36 | | | | 6.05 | | | 0.0010 | | | | |
|  | | Temporal\_Mid\_R | | | 42 -66 0 | | | | 5.53 | | | 0.0042 | | | | |
| **High Gamma**  **MAC-awake Level** | | **Region of Interest** | | | **Voxel Coordinate** | | | | **t-value** | | | **p-value** | | | | | |
| 0.75 N2O | | Frontal\_Mid\_R | | | 24 54 30 | | | | 7.18 | | | 1.00E-04 | | | | | |
|  | | Frontal\_Sup\_Medial\_L | | | -6 30 60 | | | | 6.94 | | | 0.0002 | | | | | |
|  | | Precuneus\_R | | | 6 -78 48 | | | | 6.92 | | | 0.0002 | | | | | |
|  | | Frontal\_Sup\_R | | | 24 54 36 | | | | 6.83 | | | 0.0002 | | | | | |
|  | | Cingulum\_Mid\_L | | | 0 0 42 | | | | 6.81 | | | 0.0002 | | | | | |
|  | | Supp\_Motor\_Area\_L | | | -6 0 48 | | | | 6.64 | | | 0.0004 | | | | | |
|  | | Frontal\_Sup\_L | | | -18 24 60 | | | | 6.48 | | | 0.0004 | | | | | |
|  | | Occipital\_Mid\_R | | | 36 -84 24 | | | | 6.45 | | | 0.0006 | | | | | |
|  | | Frontal\_Mid\_L | | | -24 18 60 | | | | 6.42 | | | 0.0006 | | | | | |
|  | | Frontal\_Sup\_Medial\_R | | | 12 60 30 | | | | 6.41 | | | 0.0006 | | | | | |
|  | | Precuneus\_L | | | -12 -66 60 | | | | 6.27 | | | 0.0012 | | | | | |
|  | | Cingulum\_Mid\_R | | | 6 0 42 | | | | 6.15 | | | 0.0012 | | | | | |
|  | | Parietal\_Sup\_L | | | -18 -66 60 | | | | 6.14 | | | 0.0012 | | | | | |
|  | | Supp\_Motor\_Area\_R | | | 12 6 66 | | | | 6.08 | | | 0.0014 | | | | | |
|  | | Cuneus\_R | | | 18 -90 12 | | | | 6.05 | | | 0.0014 | | | | | |
|  | | Occipital\_Sup\_L | | | -18 -90 30 | | | | 6.02 | | | 0.0014 | | | | | |
|  | | Angular\_R | | | 48 -72 30 | | | | 5.95 | | | 0.0014 | | | | | |
|  | | Calcarine\_R | | | 18 -90 6 | | | | 5.91 | | | 0.0016 | | | | | |
|  | | Parietal\_Sup\_R | | | 12 -66 66 | | | | 5.86 | | | 0.0018 | | | | | |
|  | | Occipital\_Mid\_L | | | -30 -96 12 | | | | 5.74 | | | 0.002999 | | | | | |
|  | | Cuneus\_L | | | -12 -78 18 | | | | 5.73 | | | 0.002999 | | | | | |
|  | | Occipital\_Sup\_R | | | 24 -90 18 | | | | 5.73 | | | 0.002999 | | | | | |
|  | | Angular\_L | | | -48 -66 42 | | | | 5.61 | | | 0.003199 | | | | | |
|  | | Cingulum\_Ant\_L | | | 0 0 30 | | | | 5.51 | | | 0.003599 | | | | | |
|  | | Calcarine\_L | | | -6 -72 18 | | | | 5.5 | | | 0.003599 | | | | | |
|  | | Precentral\_R | | | 36 -24 66 | | | | 5.47 | | | 0.003599 | | | | | |
|  | | Parietal\_Inf\_L | | | -48 -60 48 | | | | 5.45 | | | 0.004199 | | | | | |
| 1.30 Xenon | | Rolandic\_Oper\_R | | | 48 0 6 | | | | 6.31 | | | 0.0005 | | | | | |

*Supp. Table 2C. Electroencephalographic sources most significantly altered by Xe and N2O administration.* Significantly (p<0.005 for N2O; p<0.004 for Xe) changed regions of interest against post-antiemetic baseline for each frequency band. Voxel coordinates are in Automated Anatomical Labeling (AAL) Atlas atlas coordinate system along with associated labels6. [delta (1-4 Hz), theta (4-8 Hz), alpha (8-13 Hz), low gamma (30-49 Hz), high gamma (51-99 Hz)].

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Delta**  **MAC-awake Level** | | **Region of Interest** | | **Voxel Coordinate** | | | **t-value** | | | **p-value** | | |
| 1.30 Xenon | Supp\_Motor\_Area\_R | | 6 0 72 | | | 9.66 | | | 0.0007 | | |
|  | Supp\_Motor\_Area\_L | | 0 0 72 | | | 9.58 | | | 0.0008 | | |
|  | Postcentral\_L | | -48 -36 60 | | | 8.89 | | | 0.0008 | | |
|  | Cingulum\_Mid\_R | | 0 -12 30 | | | 8.79 | | | 0.0008 | | |
|  | Parietal\_Inf\_L | | -42 -48 54 | | | 8.76 | | | 0.0008 | | |
|  | Frontal\_Sup\_R | | 18 -12 72 | | | 8.67 | | | 0.0008 | | |
|  | Cingulum\_Mid\_L | | 0 -12 36 | | | 8.66 | | | 0.001 | | |
|  | Cingulum\_Post\_L | | -6 -36 30 | | | 8.64 | | | 0.001 | | |
|  | Precentral\_R | | 18 -18 72 | | | 8.59 | | | 0.001 | | |
|  | Cuneus\_L | | 0 -72 24 | | | 8.51 | | | 0.001 | | |
|  | Precuneus\_L | | -12 -60 30 | | | 8.51 | | | 0.001 | | |
|  | Cuneus\_R | | 6 -72 24 | | | 8.44 | | | 0.001 | | |
|  | Frontal\_Mid\_R | | 36 60 0 | | | 8.41 | | | 0.001 | | |
|  | Cingulum\_Ant\_L | | -6 0 30 | | | 8.37 | | | 0.001 | | |
|  | Precuneus\_R | | 6 -66 24 | | | 8.30 | | | 0.001 | | |
|  | Caudate\_L | | -18 -18 24 | | | 8.26 | | | 0.001 | | |
|  | Calcarine\_R | | 6 -72 18 | | | 8.25 | | | 0.001 | | |
|  | Thalamus\_L | | -6 -18 18 | | | 8.22 | | | 0.001 | | |
|  | Calcarine\_L | | 0 -72 18 | | | 8.19 | | | 0.001 | | |
|  | Paracentral\_Lobule\_L | | 0 -24 54 | | | 8.18 | | | 0.001 | | |
|  | Postcentral\_R | | 24 -36 72 | | | 8.09 | | | 0.001 | | |
|  | Paracentral\_Lobule\_R | | 12 -24 72 | | | 8.09 | | | 0.001 | | |
|  | Frontal\_Sup\_L | | -12 -6 72 | | | 7.93 | | | 0.001 | | |
|  | Parietal\_Sup\_R | | 18 -54 72 | | | 7.91 | | | 0.001 | | |
|  | Thalamus\_R | | 12 -18 18 | | | 7.88 | | | 0.001 | | |
|  | Cingulum\_Post\_R | | 6 -54 30 | | | 7.80 | | | 0.001 | | |
|  | Angular\_L | | -30 -54 36 | | | 7.73 | | | 0.001 | | |
|  | Caudate\_R | | 18 -12 24 | | | 7.72 | | | 0.001 | | |
|  | Occipital\_Sup\_R | | 24 -72 18 | | | 7.68 | | | 0.001 | | |
|  | Temporal\_Inf\_R | | 36 0 -42 | | | 7.68 | | | 0.001 | | |
|  | Precentral\_L | | -36 -30 60 | | | 7.67 | | | 0.001 | | |
|  | Parietal\_Sup\_L | | -30 -48 60 | | | 7.66 | | | 0.001 | | |
|  | SupraMarginal\_L | | -60 -24 42 | | | 7.57 | | | 0.001 | | |
|  | Occipital\_Mid\_R | | 36 -78 12 | | | 7.47 | | | 0.001 | | |
|  | Occipital\_Sup\_L | | -18 -66 30 | | | 7.39 | | | 0.0012 | | |
|  | Lingual\_R | | 6 -66 6 | | | 7.37 | | | 0.0012 | | |
|  | Occipital\_Mid\_L | | -24 -60 36 | | | 7.33 | | | 0.0012 | | |
|  | Temporal\_Sup\_R | | 66 -24 12 | | | 7.29 | | | 0.0012 | | |
|  | Lingual\_L | | 0 -72 6 | | | 7.26 | | | 0.0012 | | |
|  | Frontal\_Inf\_Tri\_R | | 48 48 0 | | | 7.25 | | | 0.0012 | | |
|  | Frontal\_Mid\_Orb\_R | | 42 54 -6 | | | 7.19 | | | 0.0012 | | |
|  | SupraMarginal\_R | | 66 -18 24 | | | 7.19 | | | 0.0012 | | |
|  | Frontal\_Mid\_L | | -42 54 6 | | | 7.11 | | | 0.0012 | | |
|  | Insula\_L | | -36 -12 18 | | | 7.02 | | | 0.0014 | | |
|  | Putamen\_L | | -24 -6 12 | | | 6.99 | | | 0.0014 | | |
|  | Fusiform\_R | | 30 06 36 | | | 6.97 | | | 0.0014 | | |
|  | Parietal\_Inf\_R | | 60 -36 48 | | | 6.91 | | | 0.0014 | | |
|  | Occipital\_Inf\_L | | -48 -72 -18 | | | 6.83 | | | 0.0014 | | |
|  | Rolandic\_Oper\_L | | -36 -24 18 | | | 6.81 | | | 0.0014 | | |
|  | Rolandic\_Oper\_R | | 60 -18 18 | | | 6.78 | | | 0.0014 | | |
|  | Pallidum\_L | | -18 0 6 | | | 6.53 | | | 0.0014 | | |
|  | Heschl\_L | | -36 -24 12 | | | 6.51 | | | 0.0014 | | |
|  | Occipital\_Inf\_R | | 30 -96 -6 | | | 6.49 | | | 0.0014 | | |
|  | Temporal\_Sup\_L | | -42 -42 18 | | | 6.48 | | | 0.0014 | | |
|  | Fusiform\_L | | -42 -72 -18 | | | 6.43 | | | 0.0014 | | |
|  | Insula\_R | | 30 -18 18 | | | 6.42 | | | 0.0014 | | |
|  | Temporal\_Mid\_R | | 54 -36 -12 | | | 6.41 | | | 0.0014 | | |
|  | ParaHippocampal\_R | | 30 06 30 | | | 6.40 | | | 0.0014 | | |
|  | Frontal\_Inf\_Tri\_L | | -48 42 12 | | | 6.39 | | | 0.0014 | | |
|  | Temporal\_Pole\_Mid\_R | | 36 6 -36 | | | 6.39 | | | 0.0014 | | |
|  | Hippocampus\_R | | 36 -30 -12 | | | 6.28 | | | 0.0014 | | |
|  | Hippocampus\_L | | -18 -36 6 | | | 6.22 | | | 0.0014 | | |
|  | Temporal\_Mid\_L | | -48 -48 18 | | | 6.20 | | | 0.0014 | | |
|  | Temporal\_Pole\_Sup\_R | | 42 18 -30 | | | 6.17 | | | 0.0016 | | |
|  | Frontal\_Sup\_Medial\_L | | -6 18 42 | | | 6.14 | | | 0.0016 | | |
|  | Temporal\_Inf\_L | | -54 -66 -12 | | | 6.12 | | | 0.0016 | | |
|  | Frontal\_Mid\_Orb\_L | | -42 48 -6 | | | 6.10 | | | 0.0016 | | |
|  | Angular\_R | | 30 -54 42 | | | 6.08 | | | 0.0016 | | |
|  | ParaHippocampal\_L | | -18 -36 -12 | | | 6.02 | | | 0.0018 | | |
|  | Amygdala\_R | | 30 0 -24 | | | 6.02 | | | 0.0018 | | |
|  | Putamen\_R | | 30 -18 0 | | | 5.80 | | | 0.0024 | | |
|  | Frontal\_Inf\_Orb\_R | | 36 24 -24 | | | 5.78 | | | 0.0024 | | |
|  | Frontal\_Sup\_Medial\_R | | 12 60 30 | | | 5.77 | | | 0.0024 | | |
|  | Frontal\_Inf\_Oper\_L | | -36 6 24 | | | 5.74 | | | 0.0026 | | |
|  | Frontal\_Sup\_Orb\_R | | 30 60 -6 | | | 5.73 | | | 0.0026 | | |
|  | Pallidum\_R | | 30 12 06 | | | 5.71 | | | 0.0026 | | |
|  | Heschl\_R | | 42 -24 12 | | | 5.61 | | | 0.0026 | | |
|  | Frontal\_Inf\_Oper\_R | | 30 6 30 | | | 5.60 | | | 0.0026 | | |
|  | Frontal\_Inf\_Orb\_L | | -42 42 -6 | | | 5.48 | | | 0.002799 | | |
|  | Olfactory\_L | | 0 12 -6 | | | 5.46 | | | 0.002799 | | |
|  | Rectus\_L | | -12 24 -12 | | | 5.40 | | | 0.003399 | | |
|  | Olfactory\_R | | 24 12 -18 | | | 5.38 | | | 0.003599 | | |
| 0.75 Xenon | Parietal\_Sup\_L | | -24 -78 48 | | | 5.36 | | | 0.002899 | | |
|  | Precuneus\_L | | -12 -66 48 | | | 5.25 | | | 0.002999 | | |
|  | Parietal\_Inf\_L | | -30 -78 48 | | | 4.99 | | | 0.004399 | | |
|  | Parietal\_Inf\_R | | 48 -54 54 | | | 4.26 | | | 0.0025 | | |
|  | Parietal\_Inf\_L | | -60 -30 42 | | | 4.15 | | | 0.003199 | | |
|  | SupraMarginal\_L | | -60 -30 36 | | | 4.15 | | | 0.003199 | | |
|  | SupraMarginal\_R | | 60 -48 24 | | | 4.13 | | | 0.003199 | | |
|  | Temporal\_Mid\_R | | 60 -30 -12 | | | 4.03 | | | 0.003599 | | |
|  | Parietal\_Sup\_L | | -24 -48 72 | | | 4.01 | | | 0.003599 | | |
|  | Angular\_R | | 54 -48 30 | | | 4.01 | | | 0.003599 | | |
|  | Postcentral\_R | | 42 -36 54 | | | 3.99 | | | 0.003799 | | |
|  | Postcentral\_L | | -24 -36 72 | | | 3.97 | | | 0.003799 | | |
|  | Temporal\_Sup\_R | | 60 -42 18 | | | 3.92 | | | 0.003999 | | |
| **Theta**  **MAC-awake Level** | | **Region of Interest** | | **Voxel Coordinate** | | | **t-value** | | | **p-value** | | |
| 1.30 Xenon | | Postcentral\_R | | 30 -36 72 | | | 8.26 | | | 1E-04 | | |
|  | | Parietal\_Sup\_L | | -24 -48 72 | | | 7.50 | | | 0.0002 | | |
|  | | Paracentral\_Lobule\_L | | -12 -36 78 | | | 7.47 | | | 0.0002 | | |
|  | | Occipital\_Inf\_L | | -48 -66 -18 | | | 7.33 | | | 0.0002 | | |
|  | | Temporal\_Inf\_L | | -54 -66 -12 | | | 7.17 | | | 0.0002 | | |
|  | | Fusiform\_L | | -42 -66 -18 | | | 7.02 | | | 0.0002 | | |
|  | | Supp\_Motor\_Area\_R | | 12 6 72 | | | 6.97 | | | 0.0004 | | |
|  | | Occipital\_Mid\_L | | -54 -72 0 | | | 6.85 | | | 0.0004 | | |
|  | | Frontal\_Sup\_Medial\_R | | 12 54 42 | | | 6.79 | | | 0.0004 | | |
|  | | Precuneus\_L | | -12 -42 78 | | | 6.73 | | | 0.0004 | | |
|  | | Temporal\_Mid\_L | | -60 -60 0 | | | 6.70 | | | 0.0004 | | |
|  | | Frontal\_Sup\_R | | 24 12 66 | | | 6.58 | | | 0.0004 | | |
|  | | Precentral\_R | | 30 -24 72 | | | 6.57 | | | 0.0004 | | |
|  | | Precentral\_L | | -24 -24 72 | | | 6.48 | | | 0.0004 | | |
|  | | Temporal\_Sup\_L | | -60 -24 12 | | | 6.45 | | | 0.0004 | | |
|  | | Paracentral\_Lobule\_R | | 6 -42 78 | | | 6.41 | | | 0.0004 | | |
|  | | Postcentral\_L | | -18 -30 72 | | | 6.40 | | | 0.0004 | | |
|  | | Parietal\_Inf\_R | | 54 -42 54 | | | 6.30 | | | 0.0006 | | |
|  | | Cuneus\_R | | 18 -84 42 | | | 6.28 | | | 0.0006 | | |
|  | | Supp\_Motor\_Area\_L | | -12 -12 72 | | | 6.26 | | | 0.0012 | | |
|  | | Occipital\_Sup\_R | | 24 -84 42 | | | 6.22 | | | 0.0012 | | |
|  | | SupraMarginal\_L | | -60 -24 18 | | | 6.22 | | | 0.0012 | | |
|  | | Rolandic\_Oper\_L | | -48 -18 18 | | | 6.19 | | | 0.0012 | | |
|  | | Insula\_L | | -36 -18 18 | | | 5.99 | | | 0.0012 | | |
|  | | Frontal\_Sup\_L | | -12 -6 72 | | | 5.93 | | | 0.0012 | | |
|  | | Heschl\_L | | -48 -12 6 | | | 5.89 | | | 0.0012 | | |
|  | | Calcarine\_R | | 12 -96 6 | | | 5.87 | | | 0.0012 | | |
|  | | Parietal\_Sup\_R | | 24 -48 72 | | | 5.86 | | | 0.0012 | | |
|  | | Frontal\_Mid\_Orb\_L | | -42 54 -6 | | | 5.83 | | | 0.0012 | | |
|  | | Precuneus\_R | | 6 -60 72 | | | 5.79 | | | 0.0012 | | |
|  | | Cuneus\_L | | 0 -96 18 | | | 5.68 | | | 0.0014 | | |
|  | | Occipital\_Sup\_L | | -6 -102 6 | | | 5.68 | | | 0.0014 | | |
|  | | Angular\_R | | 36 -78 42 | | | 5.67 | | | 0.0014 | | |
|  | | Calcarine\_L | | 0 -96 12 | | | 5.66 | | | 0.0014 | | |
|  | | Occipital\_Mid\_R | | 30 -84 36 | | | 5.66 | | | 0.0014 | | |
|  | | Lingual\_L | | -30 -48 -6 | | | 5.62 | | | 0.0014 | | |
|  | | Putamen\_L | | -30 -18 6 | | | 5.49 | | | 0.0014 | | |
|  | | Frontal\_Mid\_R | | 24 54 30 | | | 5.44 | | | 0.0014 | | |
|  | | Temporal\_Pole\_Sup\_L | | -54 6 -12 | | | 5.44 | | | 0.0014 | | |
|  | | SupraMarginal\_R | | 60 -30 48 | | | 5.43 | | | 0.0014 | | |
|  | | ParaHippocampal\_L | | -30 -42 -6 | | | 5.42 | | | 0.0014 | | |
|  | | Frontal\_Inf\_Tri\_L | | -48 18 0 | | | 5.39 | | | 0.0018 | | |
|  | | Hippocampus\_L | | -30 -36 0 | | | 5.38 | | | 0.002 | | |
|  | | Frontal\_Inf\_Orb\_L | | -48 24 -6 | | | 5.37 | | | 0.0026 | | |
|  | | Frontal\_Mid\_L | | -42 48 18 | | | 5.34 | | | 0.0026 | | |
|  | | Thalamus\_L | | -18 -18 6 | | | 5.32 | | | 0.002799 | | |
|  | | Frontal\_Sup\_Medial\_L | | 0 66 6 | | | 5.28 | | | 0.002999 | | |
|  | | Parietal\_Inf\_L | | -48 -24 36 | | | 5.24 | | | 0.003399 | | |
|  | | Frontal\_Inf\_Oper\_L | | -36 6 24 | | | 5.22 | | | 0.003399 | | |
|  | | Cingulum\_Mid\_L | | -12 -36 54 | | | 5.21 | | | 0.003399 | | |
|  | | Caudate\_L | | -18 -18 24 | | | 5.20 | | | 0.003399 | | |
|  | | Pallidum\_L | | -24 -12 0 | | | 5.20 | | | 0.003399 | | |
|  | | Frontal\_Med\_Orb\_R | | 6 66 -6 | | | 5.13 | | | 0.003799 | | |
|  | | Fusiform\_R | | 42 -36 -24 | | | 5.09 | | | 0.003799 | | |
|  | | Frontal\_Med\_Orb\_L | | -6 66 -6 | | | 5.07 | | | 0.003799 | | |
|  | | Cingulum\_Ant\_L | | -6 54 0 | | | 5.07 | | | 0.003799 | | |
|  | | Cingulum\_Post\_L | | -6 -42 6 | | | 5.07 | | | 0.003799 | | |
|  | | Frontal\_Sup\_Orb\_L | | -12 60 -6 | | | 5.01 | | | 0.003999 | | |
| **Alpha**  **MAC-awake Level** | | **Region of Interest** | | | **Voxel Coordinate** | | | **t-value** | | | **p-value** | | |
| 0.75 N2O | | Frontal\_Sup\_L | | | -12 6 72 | | | -4.65 | | | 0.0019 | | |
|  | | Precentral\_L | | | -60 6 24 | | | -4.53 | | | 0.0022 | | |
|  | | Supp\_Motor\_Area\_L | | | -6 6 72 | | | -4.47 | | | 0.0026 | | |
|  | | Frontal\_Mid\_L | | | -42 12 42 | | | -4.43 | | | 0.003199 | | |
|  | | Frontal\_Inf\_Tri\_L | | | -48 24 24 | | | -4.42 | | | 0.003599 | | |
|  | | Temporal\_Mid\_L | | | -66 -36 -6 | | | -4.4 | | | 0.003799 | | |
|  | | Frontal\_Inf\_Oper\_L | | | -60 6 18 | | | -4.37 | | | 0.003799 | | |
|  | | Postcentral\_L | | | -60 0 18 | | | -4.37 | | | 0.003799 | | |
|  | | Frontal\_Sup\_R | | | 24 24 60 | | | -4.36 | | | 0.003799 | | |
| 0.50 Xenon | | Frontal\_Sup\_L | | | -18 -6 72 | | | -7.9 | | | 1.00E-04 | | |
|  | | Frontal\_Sup\_Medial\_R | | | 12 48 48 | | | -7.78 | | | 0.0002 | | |
|  | | Frontal\_Sup\_R | | | 24 48 42 | | | -7.53 | | | 0.0004 | | |
|  | | Frontal\_Mid\_R | | | 36 42 36 | | | -7.5 | | | 0.0004 | | |
|  | | Frontal\_Sup\_Medial\_L | | | 0 42 54 | | | -7.31 | | | 0.0004 | | |
|  | | Supp\_Motor\_Area\_L | | | -6 6 72 | | | -6.88 | | | 0.0004 | | |
|  | | Temporal\_Inf\_L | | | -42 0 -42 | | | -6.76 | | | 0.0004 | | |
|  | | Frontal\_Mid\_L | | | -36 18 42 | | | -6.53 | | | 0.0004 | | |
|  | | Frontal\_Inf\_Tri\_L | | | -48 24 30 | | | -6.5 | | | 0.0004 | | |
|  | | Fusiform\_L | | | -36 -12 -42 | | | -6.4 | | | 0.0004 | | |
|  | | Precentral\_L | | | -24 -12 72 | | | -6.3 | | | 0.0004 | | |
|  | | Paracentral\_Lobule\_L | | | -12 -24 78 | | | -6.2 | | | 0.0006 | | |
|  | | Supp\_Motor\_Area\_R | | | 6 6 72 | | | -6.15 | | | 0.0006 | | |
|  | | Precentral\_R | | | 42 -12 60 | | | -6.12 | | | 0.0006 | | |
|  | | Frontal\_Inf\_Tri\_R | | | 48 30 30 | | | -6.12 | | | 0.0006 | | |
|  | | Temporal\_Inf\_R | | | 48 -48 -24 | | | -6.1 | | | 0.0008 | | |
|  | | Fusiform\_R | | | 42 -42 -24 | | | -6.09 | | | 0.0008 | | |
|  | | Frontal\_Inf\_Oper\_L | | | -54 12 24 | | | -6.02 | | | 0.0008 | | |
|  | | Parietal\_Sup\_L | | | -30 -60 66 | | | -5.98 | | | 0.0008 | | |
|  | | Temporal\_Mid\_R | | | 66 -42 6 | | | -5.98 | | | 0.0008 | | |
|  | | Temporal\_Sup\_R | | | 66 -36 12 | | | -5.95 | | | 0.0008 | | |
|  | | Frontal\_Inf\_Oper\_R | | | 42 24 30 | | | -5.73 | | | 0.001 | | |
|  | | ParaHippocampal\_L | | | -24 0 -36 | | | -5.71 | | | 0.001 | | |
|  | | Temporal\_Pole\_Mid\_L | | | -30 6 -42 | | | -5.64 | | | 0.001 | | |
|  | | Temporal\_Mid\_L | | | -60 -6 -18 | | | -5.63 | | | 0.001 | | |
|  | | Cuneus\_L | | | -6 -96 18 | | | -5.62 | | | 0.001 | | |
|  | | Postcentral\_L | | | -60 0 18 | | | -5.62 | | | 0.001 | | |
|  | | Calcarine\_L | | | -18 -102 -6 | | | -5.61 | | | 0.001 | | |
|  | | Occipital\_Sup\_L | | | -18 -90 24 | | | -5.61 | | | 0.001 | | |
|  | | Frontal\_Med\_Orb\_L | | | -12 54 -6 | | | -5.58 | | | 0.0022 | | |
|  | | Rolandic\_Oper\_L | | | -42 0 18 | | | -5.5 | | | 0.0012 | | |
|  | | Postcentral\_R | | | 36 -42 66 | | | -5.5 | | | 0.0012 | | |
|  | | Cingulum\_Mid\_R | | | 12 42 30 | | | -5.44 | | | 0.0012 | | |
|  | | Temporal\_Pole\_Sup\_L | | | -54 6 -12 | | | -5.41 | | | 0.0012 | | |
|  | | Insula\_L | | | -36 12 12 | | | -5.4 | | | 0.0012 | | |
|  | | SupraMarginal\_R | | | 60 -24 24 | | | -5.4 | | | 0.0012 | | |
|  | | Occipital\_Mid\_L | | | -18 -96 0 | | | -5.39 | | | 0.0012 | | |
|  | | Frontal\_Inf\_Orb\_R | | | 42 48 -12 | | | -5.38 | | | 0.0012 | | |
|  | | Occipital\_Inf\_L | | | -18 -96 -6 | | | -5.38 | | | 0.0012 | | |
|  | | Occipital\_Sup\_R | | | 18 -96 18 | | | -5.36 | | | 0.0012 | | |
|  | | Hippocampus\_L | | | -24 -6 -24 | | | -5.29 | | | 0.0014 | | |
|  | | Parietal\_Sup\_R | | | 42 -48 60 | | | -5.29 | | | 0.0014 | | |
|  | | Lingual\_L | | | -18 -96 -18 | | | -5.27 | | | 0.0014 | | |
|  | | Frontal\_Mid\_Orb\_R | | | 42 54 -6 | | | -5.21 | | | 0.0014 | | |
|  | | Temporal\_Sup\_L | | | -54 6 -6 | | | -5.21 | | | 0.0014 | | |
|  | | Temporal\_Pole\_Sup\_R | | | 42 18 -30 | | | -5.19 | | | 0.0014 | | |
|  | | Parietal\_Inf\_R | | | 42 -42 54 | | | -5.18 | | | 0.0014 | | |
|  | | Temporal\_Pole\_Mid\_R | | | 48 12 -30 | | | -5.18 | | | 0.0014 | | |
|  | | Amygdala\_L | | | -24 0 -24 | | | -5.17 | | | 0.0014 | | |
|  | | Cingulum\_Ant\_L | | | 0 36 30 | | | -5.15 | | | 0.0016 | | |
|  | | Cuneus\_R | | | 18 -96 12 | | | -5.15 | | | 0.0016 | | |
|  | | Angular\_L | | | -48 -72 24 | | | -5.15 | | | 0.0016 | | |
|  | | Occipital\_Inf\_R | | | 42 -66 -12 | | | -5.14 | | | 0.0016 | | |
|  | | Cingulum\_Ant\_R | | | 12 36 24 | | | -5.13 | | | 0.0016 | | |
|  | | Rectus\_R | | | 6 30 -24 | | | -5.1 | | | 0.0016 | | |
|  | | Angular\_R | | | 42 -60 54 | | | -5.08 | | | 0.0016 | | |
|  | | Rectus\_L | | | 0 30 -24 | | | -5.06 | | | 0.0018 | | |
|  | | ParaHippocampal\_R | | | 36 -30 -18 | | | -5.06 | | | 0.0018 | | |
|  | | Putamen\_L | | | -24 12 12 | | | -5.01 | | | 0.0018 | | |
|  | | Amygdala\_R | | | 36 0 -24 | | | -4.97 | | | 0.002 | | |
|  | | Cingulum\_Mid\_L | | | -6 24 36 | | | -4.95 | | | 0.0022 | | |
|  | | Frontal\_Sup\_Orb\_R | | | 30 60 -6 | | | -4.94 | | | 0.0024 | | |
|  | | Frontal\_Inf\_Orb\_L | | | -48 18 -6 | | | -4.91 | | | 0.0024 | | |
|  | | Caudate\_L | | | -18 12 18 | | | -4.91 | | | 0.0024 | | |
|  | | Frontal\_Sup\_Orb\_L | | | -12 12 -24 | | | -4.9 | | | 0.0024 | | |
|  | | Insula\_R | | | 36 18 -18 | | | -4.88 | | | 0.0026 | | |
|  | | Olfactory\_L | | | -24 6 -18 | | | -4.87 | | | 0.0026 | | |
|  | | Hippocampus\_R | | | 36 -30 -12 | | | -4.85 | | | 0.0026 | | |
|  | | Lingual\_R | | | 18 -48 -12 | | | -4.84 | | | 0.0026 | | |
|  | | Rolandic\_Oper\_R | | | 60 -18 18 | | | -4.82 | | | 0.002999 | | |
|  | | Occipital\_Mid\_R | | | 24 -96 6 | | | -4.77 | | | 0.003199 | | |
|  | | SupraMarginal\_L | | | -60 -18 42 | | | -4.77 | | | 0.003199 | | |
|  | | Parietal\_Inf\_L | | | -54 -24 48 | | | -4.76 | | | 0.003199 | | |
|  | | Olfactory\_R | | | 24 12 -18 | | | -4.74 | | | 0.003399 | | |
|  | | Frontal\_Med\_Orb\_R | | | 12 54 -12 | | | -4.7 | | | 0.004199 | | |
|  | | Calcarine\_R | | | 6 -90 6 | | | -4.7 | | | 0.003799 | | |
|  | | Caudate\_R | | | 18 24 12 | | | -4.65 | | | 0.004599 | | |
|  | | Pallidum\_L | | | -18 0 6 | | | -4.65 | | | 0.004599 | | |
|  | | Pallidum\_R | | | 24 0 -6 | | | -4.65 | | | 0.004599 | | |
|  | | Putamen\_R | | | 30 6 -6 | | | -4.64 | | | 0.004599 | | |
|  | | Thalamus\_L | | | -12 -6 0 | | | -4.55 | | | 0.004799 | | |
| 0.25 Xenon | | Frontal\_Inf\_Orb\_L | | | -36 48 -12 | | | -5.95 | | | 0.0007 | | |
|  | | Frontal\_Mid\_Orb\_L | | | -36 54 -12 | | | -5.88 | | | 0.0008 | | |
|  | | Frontal\_Sup\_Orb\_L | | | -24 48 -12 | | | -5.81 | | | 0.0008 | | |
|  | | Rectus\_L | | | -12 48 -18 | | | -5.65 | | | 0.0016 | | |
|  | | Frontal\_Inf\_Tri\_L | | | -48 42 12 | | | -5.6 | | | 0.002 | | |
|  | | Frontal\_Mid\_L | | | -36 48 12 | | | -5.56 | | | 0.0022 | | |
|  | | Paracentral\_Lobule\_L | | | -12 -24 78 | | | -5.56 | | | 0.0011 | | |
|  | | Frontal\_Sup\_Medial\_L | | | -12 54 0 | | | -5.54 | | | 0.0022 | | |
|  | | Cingulum\_Ant\_L | | | -12 48 0 | | | -5.52 | | | 0.0022 | | |
|  | | Parietal\_Inf\_R | | | 48 -54 54 | | | -5.51 | | | 0.0022 | | |
|  | | Frontal\_Sup\_L | | | -18 54 12 | | | -5.47 | | | 0.0024 | | |
|  | | Frontal\_Sup\_Medial\_R | | | 12 66 18 | | | -5.38 | | | 0.002799 | | |
|  | | Frontal\_Sup\_R | | | 18 66 12 | | | -5.32 | | | 0.002999 | | |
|  | | Rectus\_R | | | 6 42 -24 | | | -5.31 | | | 0.003199 | | |
|  | | Frontal\_Mid\_R | | | 30 60 6 | | | -5.25 | | | 0.003199 | | |
|  | | Frontal\_Med\_Orb\_R | | | 6 48 -12 | | | -5.24 | | | 0.003199 | | |
|  | | Cingulum\_Ant\_R | | | 6 42 0 | | | -5.17 | | | 0.003199 | | |
|  | | Frontal\_Sup\_Orb\_R | | | 12 60 -18 | | | -5.13 | | | 0.003399 | | |
|  | | SupraMarginal\_L | | | -60 -42 36 | | | -5.12 | | | 0.003399 | | |
|  | | Fusiform\_L | | | -36 -18 -30 | | | -5.11 | | | 0.003599 | | |
|  | | Olfactory\_L | | | -6 24 -12 | | | -5.1 | | | 0.003599 | | |
|  | | Temporal\_Inf\_L | | | -42 -24 -30 | | | -5.06 | | | 0.003799 | | |
|  | | Parietal\_Inf\_L | | | -60 -48 36 | | | -5.04 | | | 0.003799 | | |
|  | | Caudate\_R | | | 6 18 0 | | | -5.02 | | | 0.003799 | | |
|  | | Temporal\_Mid\_L | | | -48 -18 -18 | | | -5.01 | | | 0.003799 | | |
|  | | Thalamus\_L | | | -12 -6 6 | | | -4.92 | | | 0.003799 | | |
|  | | Insula\_R | | | 30 -18 18 | | | -4.91 | | | 0.003999 | | |

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