Suppl. 1. The differences in limbic structures volumes between patients with NREM-predominant obstructive sleep apnea and those with REM-predominant obstructive sleep apnea.

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| --- | --- | --- | --- | --- | --- | --- | --- |
| Structures | Patients with NREM-predominant OSA (N=8) | | Patients with REM-predominant OSA (N=5) | |  | | |
| Mean | SD | Mean | SD | Difference | 95% CI | *p*-value |
| Right hemisphere |  |  |  |  |  |  |  |
| Amygdala | 0.097 | 0.009 | 0.103 | 0.017 | 0.006 | -0.0102 to 0.0217 | 0.445 |
| Basal Forebrain | 0.020 | 0.004 | 0.021 | 0.002 | 0.001 | -0.0036 to 0.0047 | 0.788 |
| Fornix | 0.031 | 0.003 | 0.033 | 0.005 | 0.001 | -0.0033 to 0.0062 | 0.517 |
| Hippocampus | 0.239 | 0.021 | 0.255 | 0.034 | 0.016 | -0.0180 to 0.0491 | 0.330 |
| Hypothalamus | 0.027 | 0.003 | 0.030 | 0.004 | 0.002 | -0.0019 to 0.0061 | 0.275 |
| Mammillary body | 0.003 | 0.000 | 0.003 | 0.000 | 0.000 | -0.0003 to 0.0004 | 0.901 |
| Nucleus accumbens | 0.020 | 0.006 | 0.020 | 0.007 | 0.000 | -0.0080 to 0.0079 | 0.989 |
| Septal nuclei | 0.006 | 0.001 | 0.006 | 0.001 | 0.000 | -0.0009 to 0.0009 | 0.934 |
| Thalamus | 0.451 | 0.041 | 0.496 | 0.055 | 0.045 | -0.0137 to 0.1041 | 0.119 |
| Left hemisphere |  |  |  |  |  |  |  |
| Amygdala | 0.085 | 0.012 | 0.091 | 0.012 | 0.005 | -0.0101 to 0.0207 | 0.468 |
| Basal Forebrain | 0.019 | 0.003 | 0.020 | 0.001 | 0.000 | -0.0029 to 0.0038 | 0.774 |
| Fornix | 0.030 | 0.003 | 0.031 | 0.006 | 0.001 | -0.0043 to 0.0070 | 0.611 |
| Hippocampus | 0.233 | 0.012 | 0.251 | 0.028 | 0.018 | -0.006446 to 0.04188 | 0.135 |
| Hypothalamus | 0.027 | 0.002 | 0.029 | 0.004 | 0.002 | -0.0011 to 0.0055 | 0.171 |
| Mammillary body | 0.003 | 0.000 | 0.003 | 0.000 | 0.000 | -0.0003 to 0.0004 | 0.973 |
| Nucleus accumbens | 0.022 | 0.006 | 0.023 | 0.006 | 0.001 | -0.0063 to 0.0084 | 0.765 |
| Septal nuclei | 0.007 | 0.001 | 0.006 | 0.001 | 0.000 | -0.0012 to 0.0006 | 0.487 |
| Thalamus | 0.490 | 0.036 | 0.540 | 0.096 | 0.050 | -0.0312 to 0.1305 | 0.204 |

OSA: obstructive sleep apnea

**Suppl. 2.** The results of correlation analysis between age and limbic structures volumes in the healthy controls

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Right Amygdala | Right Basal forebrain | Right Fornix | Right Hippocampus | Right Hypothalamus | Right Mammillary body | Right Nucleus accumbens | Right Septal nuclei | Right thalamus | Left Amygdala | Left Basal forebrain | Left Fornix | Left Hippocampus | Left Hypothalamus | Left Mammillary body | Left Nucleus accumbens | Left Septal nuclei | Left thalamus |
| Age | Correlation coefficient | -0.029 | -0.225 | -0.091 | -0.093 | -0.292 | -0.204 | -0.156 | -0.071 | -0.256 | -0.062 | -0.065 | -0.189 | -0.252 | -0.275 | -0.311 | -0.146 | -0.168 | -0.310 |
| *p*-value | 0.880 | 0.233 | 0.632 | 0.627 | 0.117 | 0.281 | 0.411 | 0.708 | 0.172 | 0.745 | 0.734 | 0.316 | 0.180 | 0.141 | 0.095 | 0.443 | 0.375 | 0.096 |