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  |