**Appendix-3: supplemental tables**

**Table S2**: pairwise connections showing significant differences for COVID-19 patients relative to controls. Brain regions are from the Brainnetome atlas, with centers of mass (CoMs) given in Montréal Neurological Institute (MNI) space coordinates. Bootstrap ratio values (BSRs) provide z-scored standardized measures of effect size.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | region 1 | CoM 1 | | | region 2 | CoM 2 | | | BSR |
| 1 | Amygdala\_L\_(lAmyg) | -16 | -2 | -20 | Superior\_temporal\_gyrus\_L\_(A38l) | -44 | 10 | -20 | -4.64 |
| 2 | Parahippocampal\_gyrus\_L\_(A35/36c) | -26 | -8 | -34 | Middle\_temporal\_gyrus\_L\_(A21r) | -52 | 2 | -28 | -4.44 |
| 3 | Inferior\_temporal\_gyrus\_L\_(A20il) | -56 | -16 | -28 | Superior\_temporal\_gyrus\_L\_(A38l) | -44 | 10 | -20 | -4.37 |
| 4 | Amygdala\_L\_(mAmyg) | -22 | -76 | 34 | Inferior\_temporal\_gyrus\_R\_(A37vl) | 56 | -58 | -8 | -4.35 |
| 5 | Postcentral\_gyrus\_R\_(A1/2/3ulhf) | 8 | -56 | 34 | Superior\_frontal\_gyrus\_R\_(A8dl) | 22 | 26 | 52 | -4.34 |
| 6 | Basal\_ganglia\_L\_(NAC) | -22 | -2 | 4 | Orbital\_gyrus\_L\_(A12/47o) | -34 | 34 | -16 | -4.30 |
| 7 | Parahippocampal\_gyrus\_R\_(A35/36c) | 26 | -8 | -34 | Orbital\_gyrus\_R\_(A12/47l) | 44 | 32 | -8 | -4.29 |
| 8 | Thalamus\_R\_(rTtha) | 20 | -22 | 4 | Insular\_gyrus\_L\_(dId) | -38 | -8 | 8 | -4.24 |
| 9 | Parahippocampal\_gyrus\_L\_(TH) | -22 | 2 | -32 | Middle\_temporal\_gyrus\_R\_(A37dl) | 62 | -52 | 2 | -4.21 |
| 10 | Amygdala\_R\_(lAmyg) | 20 | -2 | -20 | Parahippocampal\_gyrus\_R\_(A35/36c) | 26 | -8 | -34 | -4.19 |
| 11 | Hippocampus\_L\_(rHipp) | -26 | -4 | -20 | Superior\_temporal\_gyrus\_L\_(A38l) | -44 | 10 | -20 | -4.16 |
| 12 | Parahippocampal\_gyrus\_R\_(A35/36c) | 26 | -8 | -34 | Middle\_temporal\_gyrus\_L\_(A21r) | -52 | 2 | -28 | -4.15 |
| 13 | Hippocampus\_L\_(rHipp) | -26 | -4 | -20 | Middle\_frontal\_gyrus\_R\_(A8vl) | 40 | 26 | 40 | -4.09 |
| 14 | Hippocampus\_L\_(rHipp) | -26 | -4 | -20 | Superior\_frontal\_gyrus\_R\_(A9m) | 4 | 38 | 34 | -4.06 |
| 15 | Amygdala\_R\_(lAmyg) | 20 | -2 | -20 | Parahippocampal\_gyrus\_L\_(TH) | -22 | 2 | -32 | -4.04 |
| 16 | Amygdala\_L\_(lAmyg) | -16 | -2 | -20 | Middle\_frontal\_gyrus\_R\_(A8vl) | 40 | 26 | 40 | -3.98 |
| 17 | Parahippocampal\_gyrus\_R\_(TH) | 22 | 2 | -34 | Inferior\_temporal\_gyrus\_L\_(A20iv) | -44 | -22 | -28 | -3.84 |
| 18 | Amygdala\_L\_(mAmyg) | -22 | -76 | 34 | Superior\_frontal\_gyrus\_R\_(A9m) | 4 | 38 | 34 | -3.82 |
| 19 | Parahippocampal\_gyrus\_R\_(TH) | 22 | 2 | -34 | Inferior\_temporal\_gyrus\_R\_(A20iv) | 46 | -14 | -32 | -3.81 |
| 20 | Post\_super\_temp\_sulcus\_R\_(cpSTS) | 52 | -38 | 4 | Parahippocampal\_gyrus\_L\_(TH) | -22 | 2 | -32 | -3.78 |
| 21 | Orbital\_gyrus\_R\_(A12/47l) | 44 | 32 | -8 | Orbital\_gyrus\_L\_(A14m) | -8 | 52 | -8 | -3.76 |
| 22 | Parahippocampal\_gyrus\_R\_(A35/36c) | 26 | -8 | -34 | Orbital\_gyrus\_R\_(A12/47o) | 40 | 38 | -14 | -3.75 |
| 23 | Amygdala\_L\_(mAmyg) | -22 | -76 | 34 | Middle\_frontal\_gyrus\_L\_(A8vl) | -34 | 22 | 46 | -3.70 |
| 24 | Amygdala\_L\_(mAmyg) | -22 | -76 | 34 | Superior\_frontal\_gyrus\_L\_(A9m) | -4 | 34 | 38 | -3.69 |
| 25 | Thalamus\_R\_(IPFtha) | 10 | -16 | 14 | Amygdala\_L\_(lAmyg) | -16 | -2 | -20 | -3.68 |
| 26 | Parahippocampal\_gyrus\_L\_(A35/36r) | -40 | -50 | -16 | Superior\_temporal\_gyrus\_L\_(A38l) | -44 | 10 | -20 | -3.68 |
| 27 | Hippocampus\_R\_(cHipp) | 22 | -14 | -20 | Middle\_frontal\_gyrus\_R\_(A9/46v) | 40 | 44 | 14 | -3.65 |
| 28 | Thalamus\_R\_(mPFtha) | 28 | -2 | 2 | Basal\_ganglia\_L\_(GP) | -14 | 14 | -2 | -3.60 |
| 29 | Parahippocampal\_gyrus\_L\_(TH) | -22 | 2 | -32 | Inferior\_temporal\_gyrus\_R\_(A20cl) | 62 | -40 | -16 | -3.59 |
| 30 | Thalamus\_R\_(cTtha) | 14 | -28 | 8 | Thalamus\_L\_(cTtha) | -16 | -28 | 4 | -3.57 |
| 31 | Parahippocampal\_gyrus\_R\_(A35/36c) | 26 | -8 | -34 | Superior\_temporal\_gyrus\_L\_(A22r) | -56 | -4 | -10 | -3.56 |
| 32 | Amygdala\_L\_(mAmyg) | -22 | -76 | 34 | Middle\_frontal\_gyrus\_R\_(A9/46d) | 32 | 38 | 34 | -3.54 |
| 33 | Amygdala\_L\_(lAmyg) | -16 | -2 | -20 | Parahippocampal\_gyrus\_R\_(A35/36c) | 26 | -8 | -34 | -3.54 |
| 34 | Thalamus\_L\_(mPMtha) | -8 | -14 | 4 | Inferior\_parietal\_lobule\_L\_(A40rv) | -46 | -64 | 26 | -3.52 |
| 35 | Basal\_ganglia\_R\_(vmPu) | 14 | 8 | -8 | Amygdala\_L\_(lAmyg) | -16 | -2 | -20 | -3.49 |
| 36 | Thalamus\_L\_(Otha) | -16 | -22 | 8 | Parahippocampal\_gyrus\_L\_(A35/36c) | -26 | -8 | -34 | -3.45 |
| 37 | Thalamus\_R\_(mPFtha) | 28 | -2 | 2 | Amygdala\_L\_(lAmyg) | -16 | -2 | -20 | -3.43 |
| 38 | Thalamus\_R\_(mPFtha) | 28 | -2 | 2 | Basal\_ganglia\_L\_(vmPu) | -16 | 4 | -8 | -3.43 |
| 39 | Orbital\_gyrus\_L\_(A14m) | -8 | 52 | -8 | Inferior\_frontal\_gyrus\_R\_(A45c) | 56 | 22 | 10 | -3.43 |
| 40 | Parahippocampal\_gyrus\_R\_(A35/36c) | 26 | -8 | -34 | Superior\_temporal\_gyrus\_R\_(A41/42) | 52 | -26 | 10 | -3.41 |
| 41 | Parahippocampal\_gyrus\_R\_(A35/36c) | 26 | -8 | -34 | Superior\_temporal\_gyrus\_L\_(A38l) | -44 | 10 | -20 | -3.34 |
| 42 | Basal\_ganglia\_L\_(NAC) | -22 | -2 | 4 | Parahippocampal\_gyrus\_L\_(A35/36c) | -26 | -8 | -34 | -3.30 |
| 43 | Thalamus\_L\_(mPFtha) | -28 | -4 | 2 | Basal\_ganglia\_L\_(vmPu) | -16 | 4 | -8 | -3.30 |
| 44 | Thalamus\_R\_(IPFtha) | 10 | -16 | 14 | Basal\_ganglia\_L\_(GP) | -14 | 14 | -2 | -3.26 |
| 45 | Thalamus\_R\_(cTtha) | 14 | -28 | 8 | Thalamus\_R\_(Otha) | 14 | -22 | 8 | -3.26 |
| 46 | Basal\_ganglia\_L\_(vCa) | -28 | -28 | -10 | Amygdala\_L\_(mAmyg) | -22 | -76 | 34 | -3.25 |
| 47 | Thalamus\_R\_(IPFtha) | 10 | -16 | 14 | Basal\_ganglia\_R\_(vmPu) | 14 | 8 | -8 | -3.24 |
| 48 | Thalamus\_R\_(mPFtha) | 28 | -2 | 2 | Insular\_gyrus\_L\_(dIg) | -40 | -4 | -10 | -3.23 |
| 49 | Thalamus\_R\_(Otha) | 14 | -22 | 8 | Paracentral\_lobule\_R\_(A4ll) | 4 | -22 | 62 | -3.13 |
| 50 | Thalamus\_R\_(IPFtha) | 10 | -16 | 14 | Basal\_ganglia\_R\_(GP) | 16 | 14 | -2 | -3.12 |
| 51 | Middle\_temporal\_gyrus\_L\_(aSTS) | -58 | -20 | -10 | Superior\_temporal\_gyrus\_R\_(A38l) | 46 | 14 | -20 | -3.09 |
| 52 | Thalamus\_R\_(PPtha) | 4 | -14 | 4 | Post\_super\_temp\_sulcus\_R\_(cpSTS) | 52 | -38 | 4 | -3.08 |
| 53 | Basal\_ganglia\_R\_(GP) | 16 | 14 | -2 | Parahippocampal\_gyrus\_R\_(A35/36c) | 26 | -8 | -34 | -2.76 |

**Table S3**: list of all regions showing significant differences for COVID-19 patients relative to controls. Brain regions are from the Brainnettome atlas, with centers of mass (CoMs) given in Montréal Neurological Institute (MNI) space coordinates. Number of significant connections is identified, along with the average bootstrap ratio values (BSRs) for these connections.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | region | CoM | | | Number of connections | mean BSR |
| 1 | Parahippocampal\_gyrus\_R\_(A35/36c) | 26 | -8 | -34 | 9 | -3.67 |
| 2 | Amygdala\_L\_(mAmyg) | -22 | -76 | 34 | 6 | -3.73 |
| 3 | Amygdala\_L\_(lAmyg) | -16 | -2 | -20 | 6 | -3.79 |
| 4 | Superior\_temporal\_gyrus\_L\_(A38l) | -44 | 10 | -20 | 5 | -4.04 |
| 5 | Parahippocampal\_gyrus\_L\_(TH) | -22 | 2 | -32 | 4 | -3.90 |
| 6 | Thalamus\_R\_(mPFtha) | 28 | -2 | 2 | 4 | -3.42 |
| 7 | Thalamus\_R\_(IPFtha) | 10 | -16 | 14 | 4 | -3.33 |
| 8 | Parahippocampal\_gyrus\_L\_(A35/36c) | -26 | -8 | -34 | 3 | -3.73 |
| 9 | Hippocampus\_L\_(rHipp) | -26 | -4 | -20 | 3 | -4.10 |
| 10 | Superior\_frontal\_gyrus\_R\_(A9m) | 4 | 38 | 34 | 2 | -3.94 |
| 11 | Middle\_frontal\_gyrus\_R\_(A8vl) | 40 | 26 | 40 | 2 | -4.04 |
| 12 | Orbital\_gyrus\_L\_(A14m) | -8 | 52 | -8 | 2 | -3.60 |
| 13 | Orbital\_gyrus\_R\_(A12/47l) | 44 | 32 | -8 | 2 | -4.02 |
| 14 | Middle\_temporal\_gyrus\_L\_(A21r) | -52 | 2 | -28 | 2 | -4.30 |
| 15 | Parahippocampal\_gyrus\_R\_(TH) | 22 | 2 | -34 | 2 | -3.83 |
| 16 | Post\_super\_temp\_sulcus\_R\_(cpSTS) | 52 | -38 | 4 | 2 | -3.43 |
| 17 | Amygdala\_R\_(lAmyg) | 20 | -2 | -20 | 2 | -4.12 |
| 18 | Basal\_ganglia\_L\_(GP) | -14 | 14 | -2 | 2 | -3.43 |
| 19 | Basal\_ganglia\_R\_(GP) | 16 | 14 | -2 | 2 | -2.94 |
| 20 | Basal\_ganglia\_L\_(NAC) | -22 | -2 | 4 | 2 | -3.80 |
| 21 | Basal\_ganglia\_L\_(vmPu) | -16 | 4 | -8 | 2 | -3.37 |
| 22 | Basal\_ganglia\_R\_(vmPu) | 14 | 8 | -8 | 2 | -3.36 |
| 23 | Thalamus\_R\_(Otha) | 14 | -22 | 8 | 2 | -3.19 |
| 24 | Thalamus\_R\_(cTtha) | 14 | -28 | 8 | 2 | -3.41 |
| 25 | Superior\_frontal\_gyrus\_R\_(A8dl) | 22 | 26 | 52 | 1 | -4.34 |
| 26 | Superior\_frontal\_gyrus\_L\_(A9m) | -4 | 34 | 38 | 1 | -3.69 |
| 27 | Middle\_frontal\_gyrus\_R\_(A9/46d) | 32 | 38 | 34 | 1 | -3.54 |
| 28 | Middle\_frontal\_gyrus\_R\_(A9/46v) | 40 | 44 | 14 | 1 | -3.65 |
| 29 | Middle\_frontal\_gyrus\_L\_(A8vl) | -34 | 22 | 46 | 1 | -3.70 |
| 30 | Inferior\_frontal\_gyrus\_R\_(A45c) | 56 | 22 | 10 | 1 | -3.43 |
| 31 | Orbital\_gyrus\_L\_(A12/47o) | -34 | 34 | -16 | 1 | -4.30 |
| 32 | Orbital\_gyrus\_R\_(A12/47o) | 40 | 38 | -14 | 1 | -3.75 |
| 33 | Paracentral\_lobule\_R\_(A4ll) | 4 | -22 | 62 | 1 | -3.13 |
| 34 | Superior\_temporal\_gyrus\_R\_(A41/42) | 52 | -26 | 10 | 1 | -3.41 |
| 35 | Superior\_temporal\_gyrus\_R\_(A38l) | 46 | 14 | -20 | 1 | -3.09 |
| 36 | Superior\_temporal\_gyrus\_L\_(A22r) | -56 | -4 | -10 | 1 | -3.56 |
| 37 | Middle\_temporal\_gyrus\_R\_(A37dl) | 62 | -52 | 2 | 1 | -4.21 |
| 38 | Middle\_temporal\_gyrus\_L\_(aSTS) | -58 | -20 | -10 | 1 | -3.09 |
| 39 | Inferior\_temporal\_gyrus\_L\_(A20iv) | -44 | -22 | -28 | 1 | -3.84 |
| 40 | Inferior\_temporal\_gyrus\_R\_(A20iv) | 46 | -14 | -32 | 1 | -3.81 |
| 41 | Inferior\_temporal\_gyrus\_L\_(A20il) | -56 | -16 | -28 | 1 | -4.37 |
| 42 | Inferior\_temporal\_gyrus\_R\_(A37vl) | 56 | -58 | -8 | 1 | -4.35 |
| 43 | Inferior\_temporal\_gyrus\_R\_(A20cl) | 62 | -40 | -16 | 1 | -3.59 |
| 44 | Parahippocampal\_gyrus\_L\_(A35/36r) | -40 | -50 | -16 | 1 | -3.68 |
| 45 | Inferior\_parietal\_lobule\_L\_(A40rv) | -46 | -64 | 26 | 1 | -3.52 |
| 46 | Postcentral\_gyrus\_R\_(A1/2/3ulhf) | 8 | -56 | 34 | 1 | -4.34 |
| 47 | Insular\_gyrus\_L\_(dIg) | -40 | -4 | -10 | 1 | -3.23 |
| 48 | Insular\_gyrus\_L\_(dId) | -38 | -8 | 8 | 1 | -4.24 |
| 49 | Hippocampus\_R\_(cHipp) | 22 | -14 | -20 | 1 | -3.65 |
| 50 | Basal\_ganglia\_L\_(vCa) | -28 | -28 | -10 | 1 | -3.25 |
| 51 | Thalamus\_L\_(mPFtha) | -28 | -4 | 2 | 1 | -3.30 |
| 52 | Thalamus\_L\_(mPMtha) | -8 | -14 | 4 | 1 | -3.52 |
| 53 | Thalamus\_R\_(rTtha) | 20 | -22 | 4 | 1 | -4.24 |
| 54 | Thalamus\_R\_(PPtha) | 4 | -14 | 4 | 1 | -3.08 |
| 55 | Thalamus\_L\_(Otha) | -16 | -22 | 8 | 1 | -3.45 |
| 56 | Thalamus\_L\_(cTtha) | -16 | -28 | 4 | 1 | -3.57 |

**Table S4**: pairwise connections showing significant effects of ongoing symptom count for COVID-19 patients. Brain regions are from the Brainnetome atlas, with centers of mass (CoMs) given in Montréal Neurological Institute (MNI) space coordinates. Bootstrap ratio values (BSRs) provide z-scored standardized measures of effect size.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | region 1 | CoM 1 | | | region 2 | CoM 2 | | | BSR |
| 1 | Amygdala\_R\_(lAmyg) | 20 | -2 | -20 | Mediovent\_occipital\_cortex\_L\_(cCunG) | -4 | -80 | 10 | 4.90 |
| 2 | Mediovent\_occipital\_cortex\_L\_(cCunG) | -4 | -80 | 10 | Inferior\_temporal\_gyrus\_L\_(A20iv) | -44 | -22 | -28 | 4.78 |
| 3 | Mediovent\_occipital\_cortex\_L\_(cCunG) | -4 | -80 | 10 | Fusiform\_gyrus\_L\_(A37lv) | -32 | -64 | -14 | 4.64 |
| 4 | Basal\_ganglia\_R\_(vCa) | 28 | -28 | -10 | Mediovent\_occipital\_cortex\_L\_(vmPOS) | -16 | -62 | -8 | 4.39 |
| 5 | Inferior\_parietal\_lobule\_L\_(A40rd) | -38 | -62 | 46 | Inferior\_parietal\_lobule\_R\_(A39c) | 32 | -56 | 52 | 4.37 |
| 6 | Basal\_ganglia\_L\_(vmPu) | -16 | 4 | -8 | Mediovent\_occipital\_cortex\_R\_(rLinG) | 8 | -88 | 14 | 4.36 |
| 7 | Amygdala\_L\_(lAmyg) | -16 | -2 | -20 | Mediovent\_occipital\_cortex\_L\_(rCunG) | -10 | -82 | -10 | 4.35 |
| 8 | Parahippocampal\_gyrus\_R\_(A28/34) | 28 | -28 | -20 | Superior\_frontal\_gyrus\_L\_(A6dl) | -16 | -2 | 64 | -4.25 |
| 9 | Basal\_ganglia\_L\_(vmPu) | -16 | 4 | -8 | Mediovent\_occipital\_cortex\_R\_(rCunG) | 10 | -86 | -8 | 4.23 |
| 10 | Mediovent\_occipital\_cortex\_L\_(cCunG) | -4 | -80 | 10 | Superior\_temporal\_gyrus\_L\_(A38m) | -32 | 14 | -34 | 4.15 |
| 11 | Mediovent\_occipital\_cortex\_L\_(cCunG) | -4 | -80 | 10 | Inferior\_temporal\_gyrus\_L\_(A37elv) | -50 | -58 | -14 | 4.10 |
| 12 | Basal\_ganglia\_L\_(vmPu) | -16 | 4 | -8 | Mediovent\_occipital\_cortex\_L\_(vmPOS) | -16 | -62 | -8 | 4.09 |
| 13 | Insular\_gyrus\_R\_(dId) | 40 | -8 | 8 | Inferior\_parietal\_lobule\_R\_(A39c) | 32 | -56 | 52 | 4.09 |
| 14 | Postcentral\_gyrus\_R\_(A2) | 56 | -10 | 14 | Superior\_parietal\_lobule\_L\_(A5l) | -16 | -70 | 52 | 4.08 |
| 15 | Mediovent\_occipital\_cortex\_L\_(cCunG) | -4 | -80 | 10 | Middle\_temporal\_gyrus\_L\_(A37dl) | -58 | -58 | 4 | 4.07 |
| 16 | Inferior\_parietal\_lobule\_L\_(A40rv) | -46 | -64 | 26 | Inferior\_parietal\_lobule\_R\_(A39c) | 32 | -56 | 52 | 4.05 |
| 17 | Fusiform\_gyrus\_R\_(A37lv) | 32 | -62 | -14 | Orbital\_gyrus\_R\_(A12/47o) | 40 | 38 | -14 | 4.05 |
| 18 | Mediovent\_occipital\_cortex\_L\_(cCunG) | -4 | -80 | 10 | Orbital\_gyrus\_R\_(A12/47o) | 40 | 38 | -14 | 4.04 |
| 19 | Lateral\_occipital\_cortex\_L\_(V5/MT+) | -32 | -88 | 10 | Orbital\_gyrus\_R\_(A12/47l) | 44 | 32 | -8 | 4.03 |
| 20 | Mediovent\_occipital\_cortex\_L\_(cCunG) | -4 | -80 | 10 | Inferior\_temporal\_gyrus\_L\_(A37vl) | -56 | -62 | -8 | 4.03 |
| 21 | Lateral\_occipital\_cortex\_L\_(V5/MT+) | -32 | -88 | 10 | Orbital\_gyrus\_R\_(A12/47o) | 40 | 38 | -14 | 3.99 |
| 22 | Basal\_ganglia\_L\_(dlPu) | -14 | 2 | 16 | Mediovent\_occipital\_cortex\_R\_(rCunG) | 10 | -86 | -8 | 3.92 |
| 23 | Lateral\_occipital\_cortex\_R\_(OPC) | 50 | -70 | -2 | Superior\_temporal\_gyrus\_L\_(A38m) | -32 | 14 | -34 | 3.92 |
| 24 | Inferior\_parietal\_lobule\_R\_(A39rv) | 58 | -44 | 38 | Superior\_parietal\_lobule\_L\_(A7r) | -52 | -50 | 10 | 3.90 |
| 25 | Mediovent\_occipital\_cortex\_L\_(cCunG) | -4 | -80 | 10 | Fusiform\_gyrus\_L\_(A20rv) | -56 | -32 | -28 | 3.88 |
| 26 | Cingulate\_gyrus\_R\_(A23c) | 4 | 4 | 38 | Superior\_parietal\_lobule\_L\_(A7ip) | -22 | -46 | 64 | 3.81 |
| 27 | Inferior\_parietal\_lobule\_R\_(A40rv) | 52 | -56 | 26 | Inferior\_parietal\_lobule\_R\_(A39c) | 32 | -56 | 52 | 3.68 |
| 28 | Hippocampus\_L\_(rHipp) | -26 | -4 | -20 | Mediovent\_occipital\_cortex\_L\_(cCunG) | -4 | -80 | 10 | 3.66 |
| 29 | Lateral\_occipital\_cortex\_R\_(msOccG) | 32 | -86 | -10 | Inferior\_parietal\_lobule\_L\_(A39c) | -28 | -58 | 52 | 3.64 |
| 30 | Hippocampus\_R\_(rHipp) | 28 | -4 | -20 | Mediovent\_occipital\_cortex\_L\_(cCunG) | -4 | -80 | 10 | 3.62 |
| 31 | Inferior\_parietal\_lobule\_R\_(A39c) | 32 | -56 | 52 | Superior\_parietal\_lobule\_R\_(A7r) | 56 | -40 | 14 | 3.61 |
| 32 | Basal\_ganglia\_L\_(vmPu) | -16 | 4 | -8 | Mediovent\_occipital\_cortex\_L\_(rCunG) | -10 | -82 | -10 | 3.58 |
| 33 | Basal\_ganglia\_L\_(vmPu) | -16 | 4 | -8 | Mediovent\_occipital\_cortex\_R\_(vmPOS) | 20 | -62 | -8 | 3.53 |
| 34 | Superior\_parietal\_lobule\_L\_(A5l) | -16 | -70 | 52 | Superior\_frontal\_gyrus\_R\_(A9l) | 14 | 50 | 40 | 3.52 |
| 35 | Insular\_gyrus\_R\_(dIa) | 32 | 14 | -14 | Inferior\_parietal\_lobule\_R\_(A39c) | 32 | -56 | 52 | 3.51 |
| 36 | Superior\_parietal\_lobule\_L\_(A7c) | -16 | -58 | 62 | Precentral\_gyrus\_L\_(A4hf) | -50 | -8 | 40 | 3.44 |
| 37 | Inferior\_parietal\_lobule\_R\_(A39rv) | 58 | -44 | 38 | Superior\_parietal\_lobule\_L\_(A7pc) | -34 | -46 | 50 | 3.29 |
| 38 | Mediovent\_occipital\_cortex\_R\_(cCunG) | 8 | -76 | 10 | Fusiform\_gyrus\_L\_(A37lv) | -32 | -64 | -14 | 3.29 |
| 39 | Inferior\_parietal\_lobule\_R\_(A39rv) | 58 | -44 | 38 | Superior\_parietal\_lobule\_R\_(A7r) | 56 | -40 | 14 | 3.15 |
| 40 | Hippocampus\_L\_(rHipp) | -26 | -4 | -20 | Lateral\_occipital\_cortex\_L\_(OPC) | -46 | -74 | 2 | 3.12 |
| 41 | Amygdala\_L\_(lAmyg) | -16 | -2 | -20 | Mediovent\_occipital\_cortex\_L\_(vmPOS) | -16 | -62 | -8 | 3.05 |

**Table S5**: list of all regions showing significant effects of ongoing symptom count for COVID-19 patients. Brain regions are from the Brainnetome atlas, with centers of mass (CoMs) given in Montréal Neurological Institute (MNI) space coordinates. Number of significant connections is identified, along with the average bootstrap ratio values (BSRs) for these connections.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | region | CoM | | | Number of connections | mean BSR |
| 1 | Mediovent\_occipital\_cortex\_L\_(cCunG) | -4 | -80 | 10 | 11 | 4.17 |
| 2 | Inferior\_parietal\_lobule\_R\_(A39c) | 32 | -56 | 52 | 6 | 3.88 |
| 3 | Basal\_ganglia\_L\_(vmPu) | -16 | 4 | -8 | 5 | 3.96 |
| 4 | Orbital\_gyrus\_R\_(A12/47o) | 40 | 38 | -14 | 3 | 4.03 |
| 5 | Inferior\_parietal\_lobule\_R\_(A39rv) | 58 | -44 | 38 | 3 | 3.45 |
| 6 | Mediovent\_occipital\_cortex\_L\_(vmPOS) | -16 | -62 | -8 | 3 | 3.85 |
| 7 | Superior\_temporal\_gyrus\_L\_(A38m) | -32 | 14 | -34 | 2 | 4.03 |
| 8 | Fusiform\_gyrus\_L\_(A37lv) | -32 | -64 | -14 | 2 | 3.97 |
| 9 | Superior\_parietal\_lobule\_R\_(A7r) | 56 | -40 | 14 | 2 | 3.38 |
| 10 | Superior\_parietal\_lobule\_L\_(A5l) | -16 | -70 | 52 | 2 | 3.80 |
| 11 | Mediovent\_occipital\_cortex\_L\_(rCunG) | -10 | -82 | -10 | 2 | 3.96 |
| 12 | Mediovent\_occipital\_cortex\_R\_(rCunG) | 10 | -86 | -8 | 2 | 4.08 |
| 13 | Lateral\_occipital\_cortex\_L\_(V5/MT+) | -32 | -88 | 10 | 2 | 4.01 |
| 14 | Amygdala\_L\_(lAmyg) | -16 | -2 | -20 | 2 | 3.70 |
| 15 | Hippocampus\_L\_(rHipp) | -26 | -4 | -20 | 2 | 3.39 |
| 16 | Superior\_frontal\_gyrus\_R\_(A9l) | 14 | 50 | 40 | 1 | 3.52 |
| 17 | Superior\_frontal\_gyrus\_L\_(A6dl) | -16 | -2 | 64 | 1 | -4.25 |
| 18 | Orbital\_gyrus\_R\_(A12/47l) | 44 | 32 | -8 | 1 | 4.03 |
| 19 | Precentral\_gyrus\_L\_(A4hf) | -50 | -8 | 40 | 1 | 3.44 |
| 20 | Middle\_temporal\_gyrus\_L\_(A37dl) | -58 | -58 | 4 | 1 | 4.07 |
| 21 | Inferior\_temporal\_gyrus\_L\_(A20iv) | -44 | -22 | -28 | 1 | 4.78 |
| 22 | Inferior\_temporal\_gyrus\_L\_(A37elv) | -50 | -58 | -14 | 1 | 4.10 |
| 23 | Inferior\_temporal\_gyrus\_L\_(A37vl) | -56 | -62 | -8 | 1 | 4.03 |
| 24 | Fusiform\_gyrus\_L\_(A20rv) | -56 | -32 | -28 | 1 | 3.88 |
| 25 | Fusiform\_gyrus\_R\_(A37lv) | 32 | -62 | -14 | 1 | 4.05 |
| 26 | Parahippocampal\_gyrus\_R\_(A28/34) | 28 | -28 | -20 | 1 | -4.25 |
| 27 | Superior\_parietal\_lobule\_L\_(A7r) | -52 | -50 | 10 | 1 | 3.90 |
| 28 | Superior\_parietal\_lobule\_L\_(A7c) | -16 | -58 | 62 | 1 | 3.44 |
| 29 | Superior\_parietal\_lobule\_L\_(A7pc) | -34 | -46 | 50 | 1 | 3.29 |
| 30 | Superior\_parietal\_lobule\_L\_(A7ip) | -22 | -46 | 64 | 1 | 3.81 |
| 31 | Inferior\_parietal\_lobule\_L\_(A39c) | -28 | -58 | 52 | 1 | 3.64 |
| 32 | Inferior\_parietal\_lobule\_L\_(A40rd) | -38 | -62 | 46 | 1 | 4.37 |
| 33 | Inferior\_parietal\_lobule\_L\_(A40rv) | -46 | -64 | 26 | 1 | 4.05 |
| 34 | Inferior\_parietal\_lobule\_R\_(A40rv) | 52 | -56 | 26 | 1 | 3.68 |
| 35 | Postcentral\_gyrus\_R\_(A2) | 56 | -10 | 14 | 1 | 4.08 |
| 36 | Insular\_gyrus\_R\_(dIa) | 32 | 14 | -14 | 1 | 3.51 |
| 37 | Insular\_gyrus\_R\_(dId) | 40 | -8 | 8 | 1 | 4.09 |
| 38 | Cingulate\_gyrus\_R\_(A23c) | 4 | 4 | 38 | 1 | 3.81 |
| 39 | Mediovent\_occipital\_cortex\_R\_(cCunG) | 8 | -76 | 10 | 1 | 3.29 |
| 40 | Mediovent\_occipital\_cortex\_R\_(rLinG) | 8 | -88 | 14 | 1 | 4.36 |
| 41 | Mediovent\_occipital\_cortex\_R\_(vmPOS) | 20 | -62 | -8 | 1 | 3.53 |
| 42 | Lateral\_occipital\_cortex\_L\_(OPC) | -46 | -74 | 2 | 1 | 3.12 |
| 43 | Lateral\_occipital\_cortex\_R\_(OPC) | 50 | -70 | -2 | 1 | 3.92 |
| 44 | Lateral\_occipital\_cortex\_R\_(msOccG) | 32 | -86 | -10 | 1 | 3.64 |
| 45 | Amygdala\_R\_(lAmyg) | 20 | -2 | -20 | 1 | 4.90 |
| 46 | Hippocampus\_R\_(rHipp) | 28 | -4 | -20 | 1 | 3.62 |
| 47 | Basal\_ganglia\_R\_(vCa) | 28 | -28 | -10 | 1 | 4.39 |
| 48 | Basal\_ganglia\_L\_(dlPu) | -14 | 2 | 16 | 1 | 3.92 |