

Table 2. Studies investigating the functional and structural connectome in schizophrenia.

| Study | Participants | Age of patients | Medication | Global signal regression | Modality/ MR Scanner | Node definition | Node number | Edge definition | Network type | C_p | γ | E_{loc} | L_p | λ | E_{glo} <small>b</small> | σ | Small-worldness alteration |
|---------------------------------------------|--------------|-----------------|---------------------------|--------------------------|----------------------|------------------|-------------|---------------------|--------------|-------|----------|-----------|-------|-----------|-------------------------------|----------|-----------------------------|
| Liu et al. ⁵¹ (2016) | 96P vs 91C | 33.6±8.6 | 89 Medication | - | ASL/3T | AAL | 90 | Pearson correlation | W | NA | ↓ | ↓ | NA | = | = | ↓ | Randomization |
| Zhu et al. ⁴⁸ (2016) | 26PFS vs 26C | 32.5±7.0 | Medication | Yes | fMRI/3T | AAL | 90 | Pearson correlation | B | = | ↓ | ↓ | = | = | = | ↓ | Randomization |
| | 26PFS vs 26C | 32.5±7.0 | Medication | No | fMRI/3T | AAL | 90 | Pearson correlation | B | = | ↓ | ↓ | = | ↓ | = | = | Randomization |
| | 26PSS vs 26C | 32.7±7.0 | Medication | Yes | fMRI/3T | AAL | 90 | Pearson correlation | B | = | = | = | = | = | = | = | = |
| | 26PSS vs 26C | 32.7±7.0 | Medication | No | fMRI/3T | AAL | 90 | Pearson correlation | B | = | = | ↓ | = | = | = | = | Randomization |
| Hadley et al. ⁶¹ (2016) | 32P vs 32C | 33.6±10.4 | Medication-free ≥ 10 days | ≥ | fMRI/3T | Functional atlas | 278 | Wavelet correlation | W | ↑ | NA | NA | NA | NA | ↓ | NA | Regularization |
| Yu et al. ⁶⁰ (2015) | 82P vs 82C | 38.0±14.0 | Medication | NA | fMRI/3T | ICA | 48 | Pearson correlation | W | ↓ | NA | NA | NA | NA | ↓ | NA | Weaker small-worldization |
| Su et al. ²⁰ (2015) | 49P vs 28C | 38.4±13.4 | Medication | NA | fMRI/3T | AAL | 90 | Pearson correlation | NA | NA | NA | = | NA | NA | ↓ | NA | Regularization |
| Lo et al. ⁵² (2015) | 25P vs 29C | 36.6±13.8 | Medication | NA | fMRI/3T | AAL | 585 | Wavelet correlation | B | ↓ | NA | NA | NA | NA | ↑ | ↓ | Randomization |
| Sheffield et al. ⁵⁹ (2015) | 46P vs 54C | 34.1±11.5 | 44 Medication | Yes | fMRI/3T | FreeSurfer | 264 | Pearson correlation | W | NA | NA | ↓ | NA | NA | ↓ | NA | Weaker small-worldization |
| | | | 2 NA | | | | | | | | | | | | | | |
| Yu et al. ⁶³ (2013) | 23P vs 23C | 32±9 | Medication | NA | fMRI/3T | ICA | 42 | Correlation | W | ↑ | NA | NA | NA | NA | ↑ | NA | Stronger small-worldization |
| Ma et al. ¹⁵ (2012) | 28P vs 28C | 37.8±12.3 | Medication | NA | fMRI/3T/task | ICA | 60 | HOSD | B | ↓ | NA | NA | ↑ | NA | NA | ↓ | Weaker small-worldization |
| | 28P vs 28C | 37.8±12.3 | Medication | NA | fMRI/3T/rest | ICA | 60 | HOSD | B | ↓ | NA | NA | ↓ | NA | NA | ↓ | Randomization |
| Li et al. ⁶² (2012) | 21P vs 36C | 36.7±9.3 | Medication | Yes | fMRI/1.5T | AAL | 64 | Pearson correlation | B | NA | NA | ↑ | NA | NA | ↓ | NA | Regularization |
| He et al. ¹⁷ (2012) | 35P vs 32C | 34.3±11.8 | Medication | NA | fMRI/1.5T+3T | ICA | 105 | Partial correlation | B | ↓ | NA | ↓ | = | NA | = | NA | Randomization |
| Yu et al. ⁵⁵ (2011) | 24P vs 24C | 35.9±12.1 | Medication | NA | fMRI/3T | ICA | 57 | Pearson correlation | W | ↓ | NA | NA | NA | NA | NA | NA | Randomization |
| Yu et al. ²¹ (2011) | 19P vs 19C | 36.5±11.1 | Medication | NA | fMRI/3T | ICA | 57 | Partial correlation | B | ↑ | = | ↑ | ↑ | = | ↓ | = | Regularization |
| Yu et al. ⁴⁹ (2011) | 20P vs 20C | 36.7 | Medication | NA | fMRI/3T/left | ICA | 95 | Partial correlation | B | = | ↓ | = | ↑ | = | ↓ | ↓ | Weaker small-worldization |
| | 20P vs 20C | 36.7 | Medication | NA | fMRI/3T/right | ICA | 95 | Partial correlation | B | = | ↓ | = | = | = | = | ↓ | Randomization |
| Wang et al. ⁵⁴ (2010) | 23P vs 33C | 30.0±9.2 | Medication | NA | fMRI/3T | AAL | 90 | Partial correlation | B | NA | NA | ↓ | NA | NA | = | NA | Randomization |
| Lynall et al. ⁵³ (2010) | 12P vs 15C | 32.8±9.2 | Medication | NA | fMRI/1.5T | AAL | 72 | Wavelet correlation | B | ↓ | NA | NA | NA | NA | ↑ | ↓ | Randomization |
| Alexander-Bloch et al. ⁵⁰ (2010) | 13P vs 19C | 18±4 | NA | NA | fMRI/1.5T | HOA | 100 | Wavelet correlation | B | ↓ | NA | ↓ | NA | NA | ↑ | = | Randomization |
| Liu et al. ⁵⁸ (2008) | 31P vs 31C | 24±6 | 21 Medication | NA | fMRI/1.5T | AAL | 90 | Partial correlation | B | ↓ | = | ↓ | ↑ | = | ↓ | = | Weaker small-worldization |
| | | | 10 Drug-naive | | | | | | | | | | | | | | |
| Alexander-Bloch et al. ⁵⁶ (2013) | 19P vs 20C | 18.7±4.9 | Medication | NA | fMRI/1.5T | HOA | 293 | Wavelet correlation | NA | ↓ | NA | NA | NA | NA | ↑ | NA | Randomization |
| Fornito et al. ⁶⁴ (2011) | 23P vs 25C | 20.45 ±4.36 | 16 Medication | NA | fMRI/1.5T | AAL | 78 | Pearson correlation | B | NA | = | = | NA | = | = | = | = |
| | | | 7 Drug-naive | | | | | | | | | | | | | | |
| Tomasi et al. ⁵⁷ (2014) | 69P vs 74C | 38±14 | NA | NA | fMRI/3T | voxelwise | 3 mm | Pearson correlation | B | ↓ | NA | NA | ↓ | NA | NA | = | Randomization |

| isotropic | | | | | | | | | | | | | | | | | |
|--------------------------------------------|----------------|-----------|---------------|-----|-------------|------------|-----|----------------------------|---|----|----|----|----|----|----|----|---------------------------|
| Zhu et al. ¹⁶ (2016) | 35P+AVH vs 50C | 31.5±7.7 | Medication | Yes | fMRI/3T | AAL | 90 | Pearson correlation | W | ↓ | = | ↓ | ↑ | = | ↓ | = | Weaker small-worldization |
| | 41P-AVH vs 50C | 32.3±5.7 | Medication | Yes | fMRI/3T | AAL | 90 | Pearson correlation | W | ↓ | = | ↓ | ↑ | = | ↓ | = | Weaker small-worldization |
| | 35P+AVH vs 50C | 31.5±7.7 | Medication | - | DTI/3T | AAL | 90 | Deterministic tractography | W | = | = | = | ↑ | = | = | = | Regularization |
| | 41P-AVH vs 50C | 32.3±5.7 | Medication | - | DTI/3T | AAL | 90 | Deterministic tractography | W | = | = | = | = | = | = | = | = |
| Yeo et al. ⁷² (2016) | 80P vs 116C | 34.6±10.6 | Medication | - | DTI/1.5T&3T | DKA | 82 | Deterministic tractography | W | = | NA | = | ↑ | NA | = | NA | Regularization |
| Sun et al. ⁶⁹ (2016) | 31P vs 28C | 31.9±9.7 | Medication | - | DTI/3T | AAL | 90 | Deterministic tractography | W | = | NA | = | ↑ | NA | ↓ | = | Regularization |
| Hu et al. ⁷⁹ (2016) | 42P vs 38C | 24.9±4.8 | Drug-naive | - | DTI/3T | AAL | 90 | Deterministic tractography | W | NA | = | = | NA | = | = | = | = |
| Zhang et al. ⁷⁷ (2015) | 30P vs 34C | 24.8±6.2 | Drug-naive | - | DTI/1.5T | AAL | 90 | Deterministic tractography | W | NA | NA | ↓ | ↑ | NA | ↓ | = | Weaker small-worldization |
| Yan et al. ⁷⁶ (2015) | 19P vs 24C | 23.4±4.4 | Medication | - | DTI/3T | AAL | 90 | Deterministic tractography | W | NA | NA | ↓ | NA | NA | ↓ | NA | Weaker small-worldization |
| Griffa et al. ⁶⁶ (2015) | 16P vs 15C | 42.0±10.1 | 14 Medication | - | DSI/3T | DKA | 82 | Deterministic tractography | W | NA | NA | NA | NA | NA | ↓ | NA | Regularization |
| Sun et al. ⁷⁰ (2017) | 116P vs 66C | 33.0±9.2 | Medication | - | DTI/3T | AAL | 90 | Deterministic tractography | W | = | NA | = | ↑ | NA | ↓ | = | Regularization |
| Chen et al. ⁶⁵ (2015) | 24P vs 24C | 29.2±6.8 | Medication | - | DTI/3T | AAL | 90 | Deterministic tractography | W | NA | NA | NA | ↑ | NA | NA | NA | Regularization |
| Kim et al. ⁶⁷ (2014) | 25P vs 36C | 31.8±10.7 | NA | - | DTI/3T | SUIT | 28 | Probabilistic tractography | W | = | NA | = | ↑ | NA | = | ↓ | Regularization |
| Collin et al. ⁷⁴ (2014) | 40P vs 51C | 30.6±6.1 | Medication | - | DTI/1.5T | FreeSurfer | 68 | Deterministic tractography | W | ↓ | NA | NA | NA | NA | ↓ | NA | Weaker small-worldization |
| Sun et al. ⁷⁵ (2013) | 2P vs 2C | 33 | NA | - | DTI/3T | AAL | 90 | Deterministic tractography | W | ↓ | = | NA | ↑ | = | NA | ↓ | Weaker small-worldization |
| Cabral et al. ⁷⁸ (2013) | 15P vs 15C | 15.97 | Medication | - | DTI/1.5T | AAL | 90 | Probabilistic tractography | W | = | NA | NA | ↓ | NA | NA | ↓ | Randomization |
| Van den Heuvel et al. ⁷¹ (2013) | 48P vs 45C | 29.4±7.5 | 45 Medication | - | DTI/3T | FreeSurfer | 82 | Deterministic tractography | W | = | = | NA | NA | = | ↓ | NA | Regularization |
| | | | 3 NA | | | | | | | | | | | | | | |
| | 41P vs 51C | 31.2±5.7 | 32 Medication | - | DTI/3T | FreeSurfer | 82 | Deterministic tractography | W | ↓ | = | NA | NA | = | ↓ | NA | Weaker small-worldization |
| | | | 6 Drug-naive | | | | | | | | | | | | | | |
| | | | 3 NA | | | | | | | | | | | | | | |
| Ottet et al. ⁶⁸ (2013) | 46P vs 48C | 15.2±4.5 | NA | - | DTI/3T | FreeSurfer | 83 | Deterministic tractography | B | = | NA | NA | ↑ | NA | ↓ | = | Regularization |
| Wang et al. ¹⁹ (2012) | 79P vs 96C | 37±11 | Medication | - | DTI/1.5T | AAL | 90 | Deterministic tractography | W | NA | NA | = | NA | NA | ↓ | NA | Regularization |
| Zalesky et al. ⁷³ (2011) | 74P vs 32C | 38±11 | 67 Medication | - | DTI/1.5T | AAL | 82 | Deterministic tractography | B | = | NA | NA | = | NA | ↓ | = | Regularization |
| Van den Heuvel et al. ⁸⁰ (2010) | 40P vs 40C | 26.8±5.8 | Medication | - | DTI/1.5T | AAL | 108 | Deterministic tractography | W | NA | = | NA | NA | = | NA | NA | = |
| Zhang et al. ¹⁸ (2012) | 101P vs 101C | 36.6±11.5 | Medication | - | sMRI/1.5T | AAL | 78 | Partial correlation | B | ↑ | NA | NA | ↑ | NA | NA | NA | Regularization |

Abbreviations: PFS, patients with familial schizophrenia; PSS, patients with sporadic schizophrenia; AVH, auditory verbal hallucinations; ASL, arterial spin labeling; fMRI, functional magnetic resonance imaging; DTI, diffusion tensor imaging; DSI, diffusion spectrum imaging; sMRI, structural magnetic resonance imaging; AAL, automated anatomical labeling; ICA, independent component analysis; HOA, Harvard-Oxford atlas; DKA, Desikan-Killiany Atlas; SUIT, spatially unbiased infratentorial template; HOSD, Higher-order spatial dependence; B, binary; W, weighted; C_p, clustering coefficient; γ , normalized clustering coefficient; E_{loc}, local efficiency; L_p, characteristic path length; λ , normalized characteristic path length; E_{glob}, global efficiency; σ , small-worldness; NA, not available; =, not different.