

Table S1. Brain network dysfunctions in ALSci.

Involved network	References
Limbo-thalamo-cortical pathway	[106]
Fronto-striatal network	[103]
Motor and cognitive network	[122]
DMN connectivity	[120,121]
Inferior frontal-occipital connection; corpus callosum, uncinate fasciculi	[98]
Bilateral corticospinal tract & corpus callosum	[96]
Superior longitudinal fasciculi and corpus callosum / reduced FC in sensorimotor cortex-resting state network, frontal pole, bilateral thalamus-visual cortex network, increased FC in left primary motor cortex and left fronto-parietal network	[85]
Superior longitudinal & inferior fronto-occipital fasciculi	[93]
Frontotemporal & hippocampal white matter tracts	[96]
Frontal functional network	[124]
Frontal and global network	[122]
Multimodal cortico-basal ganglia network	[128]
Fronto-striatal and fronto-temporal circuit	[133]
Fronto-striatal and fronto-parietal circuit	[137]
Basal ganglia - frontal lobe & limbic circuits	[129,131]
Medial cingulate gyrus - prefrontal circuit	[134]
Bilateral motor and fronto-temporal cortex	[138]
Reduced FC: bilateral hippocampus, parahippocampal gyrus, posterior cingulate gyrus (Papez circuit)	[99]
Increased FC: sensorimotor, default mode, bilateral fronto- parietal and orbitofrontal networks	[129]
Increased FC: limbic, DMN, salient/ventral attention + fronto- parietal networks Decreased FC: limbic and subcortical network	[130]
Corpus callosum, cingulum, inferior longitudinal, inferior fronto-occipital and uncinate fasciculus	[139]
Fronto-parietal and salience networks, DMN and SMN	[141]
DMN-somatomotor-frontoparietal and salience network	[142]
Fronto-tempo-parietal-cerebellar circuits	[221]
Reduced FC: Sensorimotor, DMV, frontoparietal & orbitofrontal Frontoparietal & sensorimotor network Frontoparietal, frontotemporal & resting state network	[129] [222] [138]
Increased FC (initial): Middel & superior frontal, frontoparietal, frontostriatal network Decreased FC (later): Between medial frontal gyrus & parietal regions	[137]

ALSci: amyotrophic lateral sclerosis with cognitive impairment; FC: functional connectivity;
DMN: default mode network; SMN: sensorimotor network