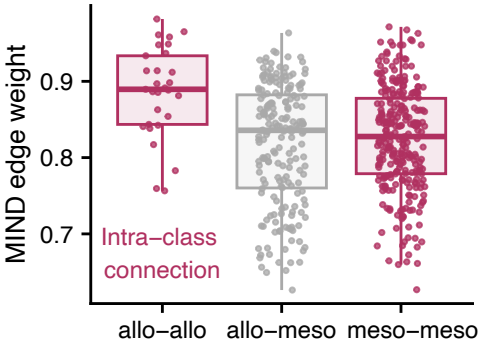
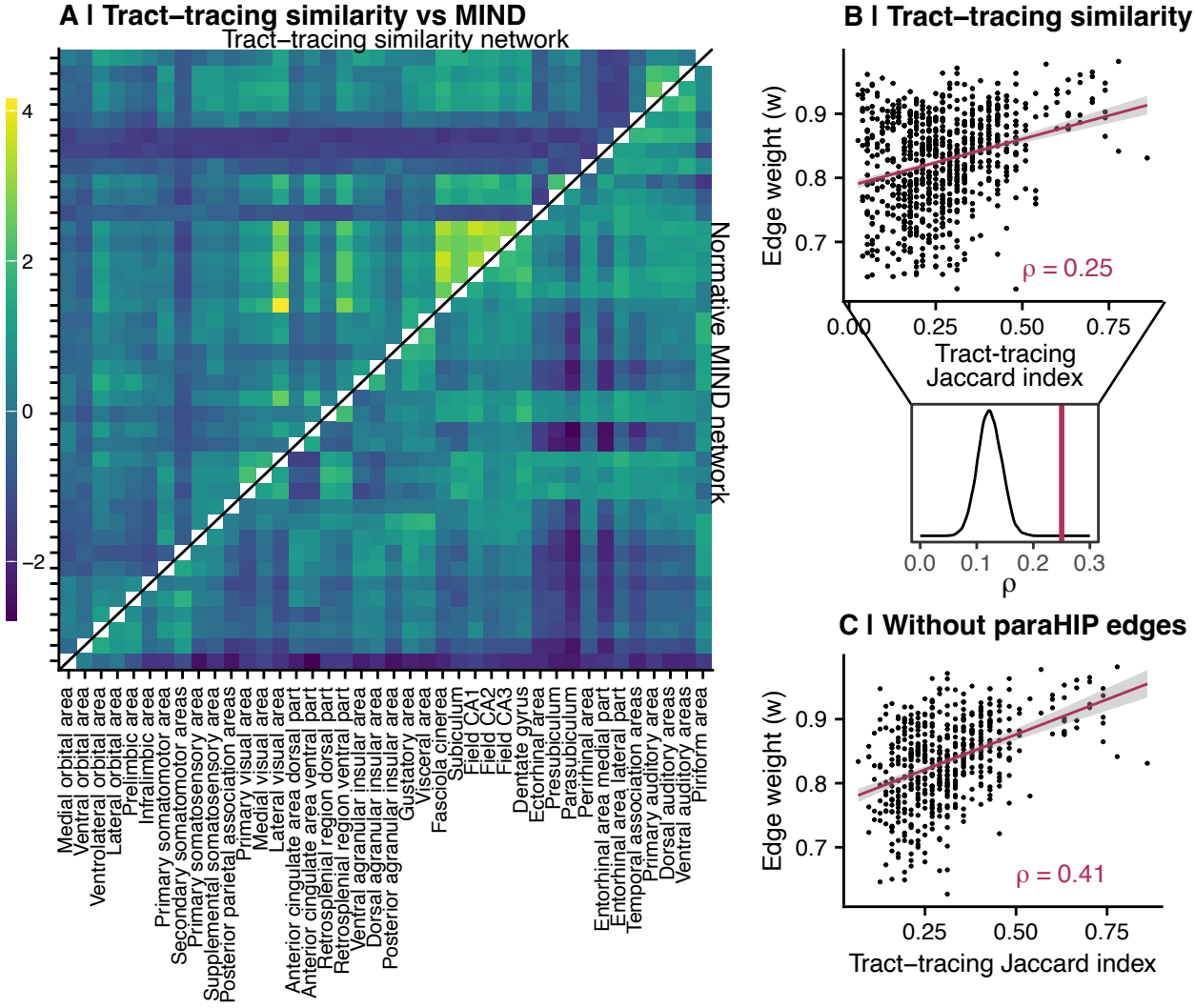
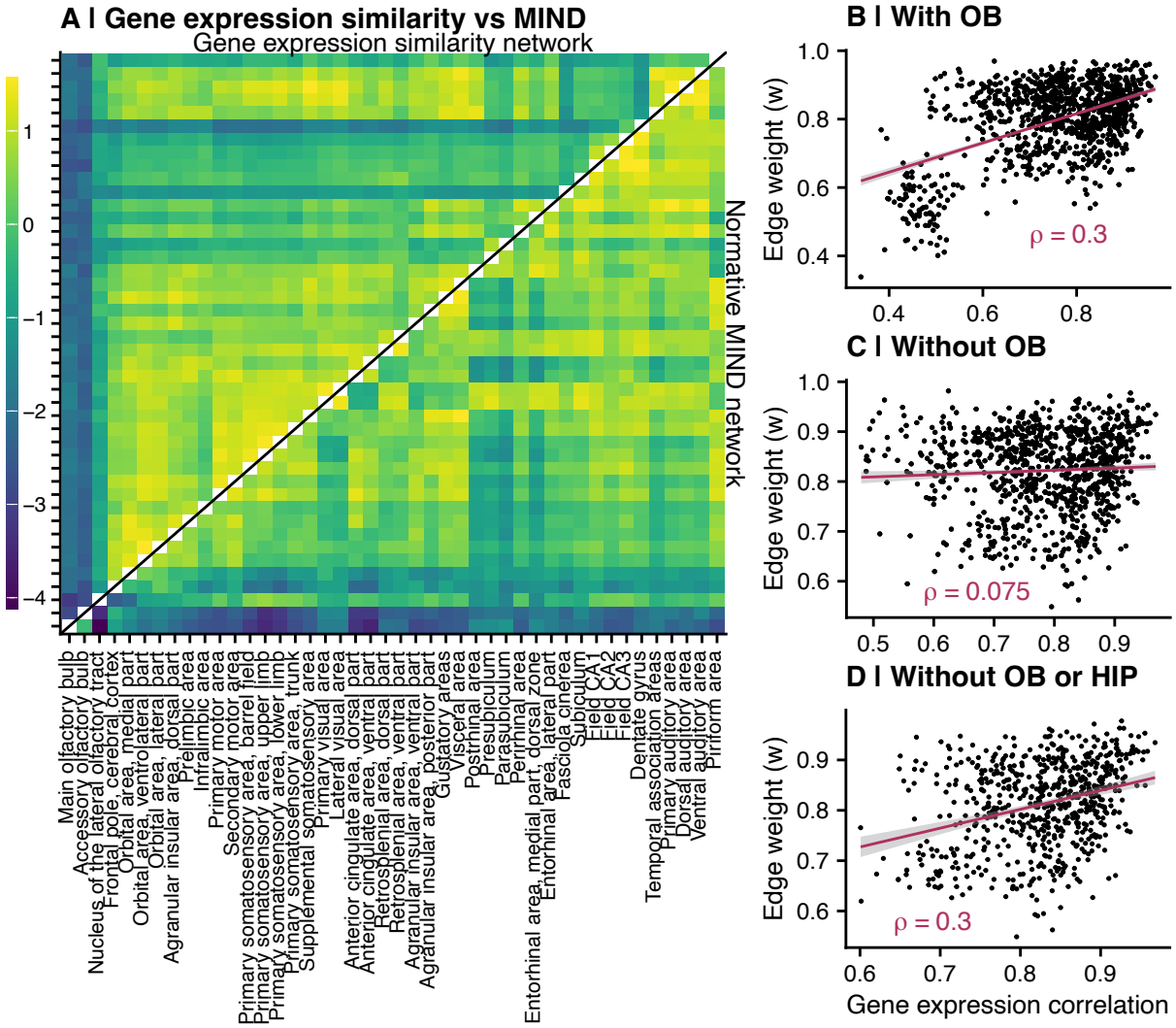
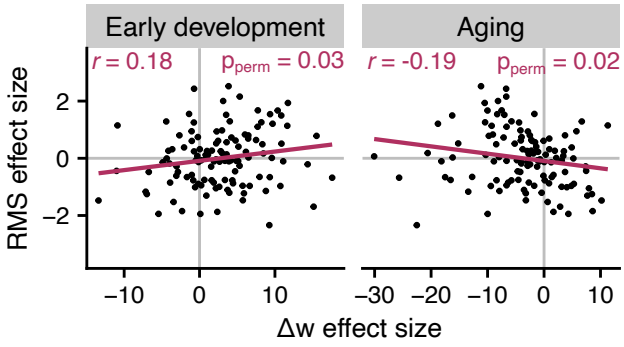
S1. Edge weights by cortex edge type



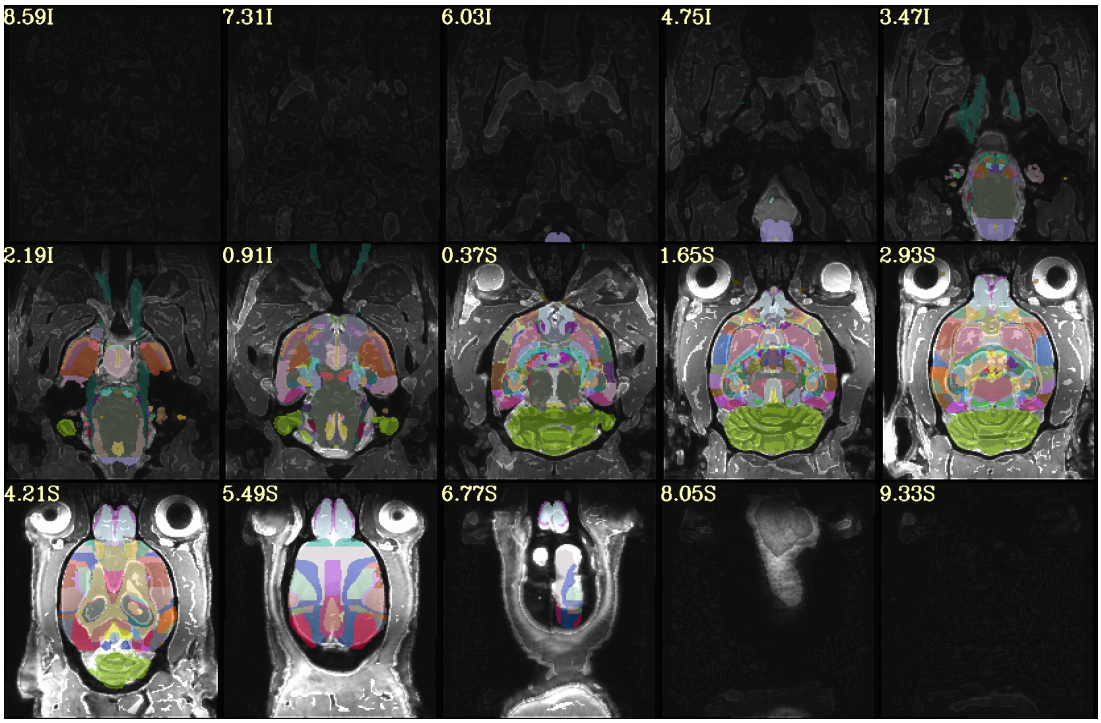

A | Tract–tracing similarity vs MIND
Tract–tracing similarity network
Normative MIND network
4
2
0
−2
Medial orbital area
Ventral orbital area
Ventrolateral orbital area
Lateral orbital area
Prelimbic area
Infralimbic area
Primary somatomotor area
Secondary somatomotor areas
Primary somatosensory area
Supplemental somatosensory area
Posterior parietal association areas
Primary visual area
Medial visual area
Lateral visual area
Anterior cingulate area dorsal part
Anterior cingulate area ventral part
Retrosplenial region dorsal part
Retrosplenial region ventral part
Ventral agranular insular area
Dorsal agranular insular area
Posterior agranular insular area
Gustatory area
Visceral area
Fasciola cinerea
Subiculum
Field CA1
Field CA2
Field CA3
Dentate gyrus
Ectorhinal area
Presubiculum
Parasubiculum
Perirhinal area
Entorhinal area medial part
Entorhinal area lateral part
Temporal association areas
Primary auditory area
Dorsal auditory areas
Ventral auditory areas
Piriform area
B | Tract–tracing similarity
Edge weight (w)
0.9
0.8
0.7
ρ = 0.25
0.00
0.25
0.50
0.75
Tract-tracing
Jaccard index
0.0
0.1
0.2
0.3
ρ
C | Without paraHIP edges
Edge weight (w)
0.9
0.8
0.7
ρ = 0.41
0.25
0.50
0.75
Tract–tracing Jaccard index

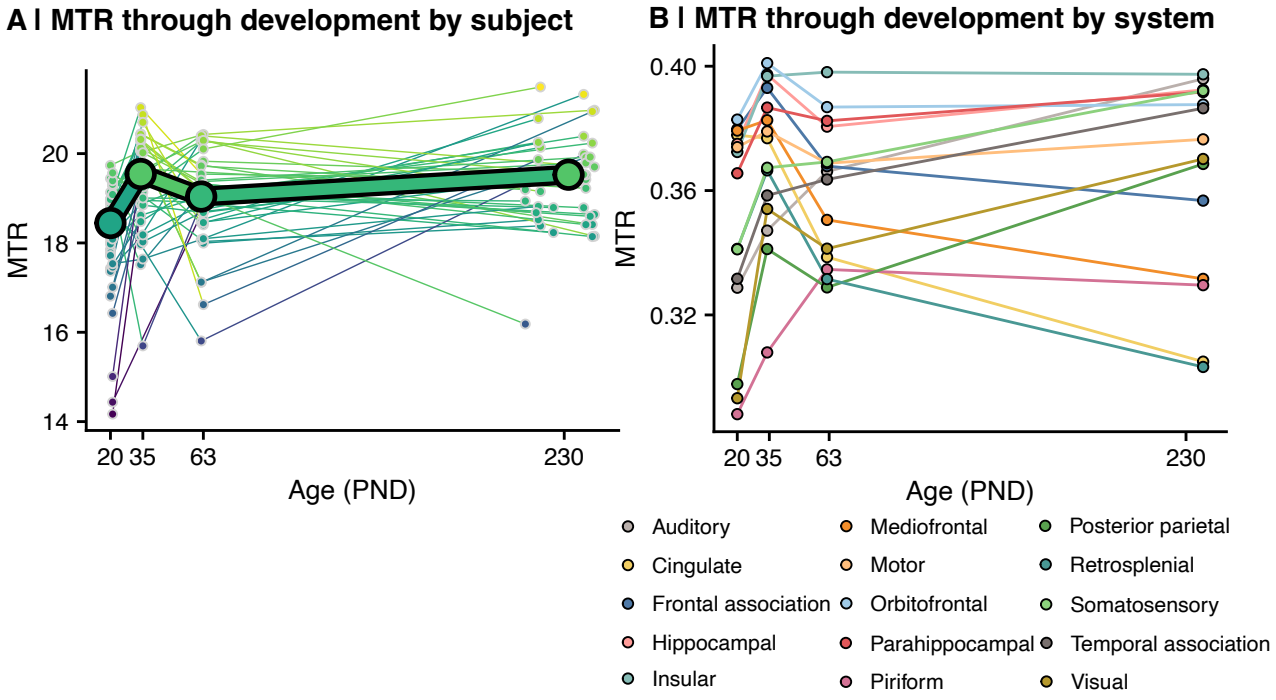

A | Gene expression similarity vs MIND
Gene expression similarity network
Normative MIND network
1
0
−1
−2
−3
−4
Main olfactory bulb
Accessory olfactory bulb
Nucleus of the lateral olfactory tract
Frontal pole, cerebral cortex
Orbital area, medial part
Orbital area, ventrolateral part
Orbital area, lateral part
Agranular insular area, dorsal part
Prelimbic area
Infralimbic area
Primary motor area
Secondary motor area
Primary somatosensory area, barrel field
Primary somatosensory area, upper limb
Primary somatosensory area, lower limb
Primary somatosensory area, trunk
Supplemental somatosensory area
Primary visual area
Lateral visual area
Anterior cingulate area, dorsal part
Anterior cingulate area, ventral part
Retrosplenial area, dorsal part
Retrosplenial area, ventral part
Agranular insular area, ventral part
Agranular insular area, posterior part
Gustatory areas
Visceral area
Postrhinal area
Presubiculum
Parasubiculum
Perirhinal area
Entorhinal area, medial part, dorsal zone
Entorhinal area, lateral part
Fasciola cinerea
Subiculum
Field CA1
Field CA2
Field CA3
Dentate gyrus
Temporal association areas
Primary auditory area
Dorsal auditory area
Ventral auditory area
Piriform area
B | With OB
Edge weight (w)
1.0
0.8
0.6
0.4
0.4
0.6
0.8
ρ = 0.3
C | Without OB
Edge weight (w)
1.0
0.9
0.8
0.7
0.6
0.5
0.6
0.7
0.8
0.9
ρ = 0.075
D | Without OB or HIP
Edge weight (w)
0.9
0.8
0.7
0.6
0.6
0.7
0.8
0.9
ρ = 0.3
Gene expression correlation

S4. RMS effect size vs Δw



S5. Example quality control images from the registration pipeline




A | MTR through development by subject
MTR
20
18
16
14
20 35
63
230
Age (PND)
B | MTR through development by system
0.40
0.36
0.32
MTR
20 35
63
230
Age (PND)
Auditory
Cingulate
Frontal association
Hippocampal
Insular
Mediofrontal
Motor
Orbitofrontal
Parahippocampal
Piriform
Posterior parietal
Retrosplenial
Somatosensory
Temporal association
Visual