

# Supporting Information

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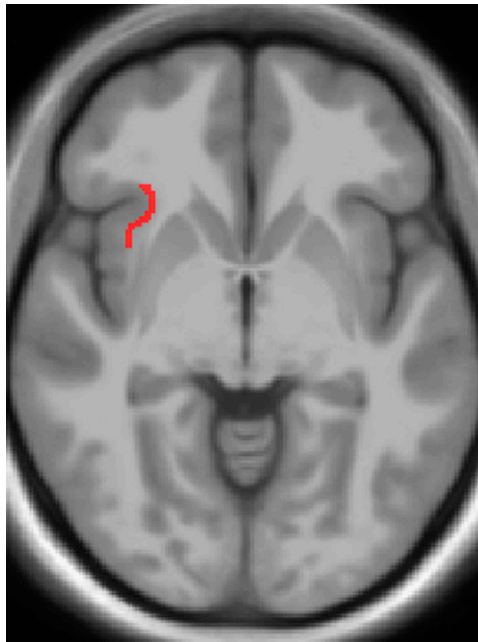


Fig. S1. Illustration of an axial slice of the left AI white matter mask used for DTI tractography.

Table S1. Manually segmented volume

Area	Absolute volume, mm <sup>3</sup>	Hemispheric volume, % (SEM)
Left whole insula		
WS ( <i>n</i> = 14)	7,484.35	1.65 (0.043)
NC ( <i>n</i> = 23)	8,921.08	1.76 (0.041)
Post-hoc ANOVA <i>P</i> value	0.004*	0.091
Right whole insula		
WS ( <i>n</i> = 14)	7361.7	1.58 (0.028)
NC ( <i>n</i> = 23)	8,761.47	1.72 (0.034)
Post-hoc ANOVA <i>P</i> value	0.001*	0.01*
Left anterior insula		
WS ( <i>n</i> = 14)	3,180.07	0.71 (0.039)
NC ( <i>n</i> = 23)	4,180.34	0.82 (0.024)
Post-hoc ANOVA <i>P</i> value	0.0005*	0.01*
Right anterior insula		
WS ( <i>n</i> = 14)	3,240.35	0.71 (0.030)
NC ( <i>n</i> = 23)	4,121.56	0.81 (0.027)
Post-hoc ANOVA <i>P</i> value	0.0005*	0.027*

NC, normal control; WS, Williams syndrome.  
\*Significant difference.

**Table S2. VBM morphometry uncorrected for whole brain volume**

Anatomical description	MNI coordinate			t value
	X	Y	Z	
Gray-matter volume NC > WS				
AI/striatum	37	20	0	6.09
AI/striatum	-30	19	-3	6.45
Middle insula	37	8	1	3.93
Middle insula	-38	1	-8	6.03
Anterior/mid thalamus	-1	1	6	8.81
Subgenual cingulate/OFC	16	20	-13	6.84
Subcallosal cingulate/OFC	-14	17	12	6.01
Fusiform gyrus	31	-53	-2	4.95
Fusiform gyrus	-24	-56	-9	6.84
IPS	30	-57	38	4.83
IPS	-24	-62	36	5.24
Gray-matter volume WS > NC				
Occipital gyrus	-24	-80	18	6.94

AI, anterior insula; IPS, intraparietal sulcus; MNI, Montreal Neurological Institute; NC, normal control; OFC, orbitofrontal cortex; rCBF, regional cerebral blood flow; VBM, voxel-based morphometry; WS, Williams syndrome.

**Table S3. VBM morphometry corrected for whole brain volume**

Anatomical description	MNI coordinate			t value
	X	Y	Z	
Gray-matter volume controls > WS				
AI/striatum	30	20	0	3.80
AI	-30	19	-3	4.35
Middle insula	37	9	0	3.88
Middle insula	-37	1	-9	3.92
Anterior/mid thalamus	-2	1	3	8.03
Subcallosal cingulate/OFC	14	19	-12	5.13
Subcallosal cingulate/OFC	-13	16	-11	4.77
Brainstem	8	-38	-36	4.96
Fusiform gyrus	-30	-53	-9	3.94
IPS	32	-78	26	6.26
IPS	-27	-75	29	4.71
Inferior occipital cortex	9	-70	-6	4.81
Gray-matter volume WS > controls				
AI/frontal operculum/OFC	30	14	-22	4.60
OFC/Medial prefrontal cortex	-24	17	-21	8.19
OFC	22	41	-16	5.88
Amygdala	12	-2	-22	3.65
Amygdala/parahippocampus	-11	-4	-14	3.31
Parahippocampal gyrus	18	-17	-16	5.09
Posterior cingulate	1	-42	24	5.88
Superior occipital gyrus	-16	-77	17	6.04
Superior occipital gyrus	18	-75	20	6.19
Cerebellum	22	-83	-36	3.96

AI, anterior insula; IPS, intraparietal sulcus; MNI, Montreal Neurological Institute; NC, normal control; OFC, orbitofrontal cortex; rCBF, regional cerebral blood flow; WS, Williams syndrome.

**Table S4. PET rCBF**

Anatomical description	MNI coordinate			t value
	X	Y	Z	
Resting rCBF NC-WS				
Anterior insula/putamen	-25	17	1	3.00
AI/mid and posterior insula/STS	-39	1	9	5.92
Anterior thalamus	0	-3	8	3.26
Mid/posterior insula	41	8	9	6.74
Middle cingulate cortex	10	-13	48	3.14
Medial prefrontal gyrus	13	51	0	2.90
IFG	-37	21	32	5.04
IFG/premotor cortex	39	1	31	4.82
Hippocampal formation	-29	-16	-21	5.85
Hippocampal formation	29	-14	-17	5.13
Hippocampal formation	35	-23	-14	4.69
Midbrain	3	-28	-15	3.31
Premotor cortex	36	-1	41	3.63
Superior temporal gyrus	-59	-16	-8	5.55
Superior temporal gyrus	49	-18	3	5.61
Inferior/mid-occipital cortex	-1	-89	7	4.94
Resting rCBF WS-NC				
AI	32	23	-19	4.92
Posterior cingulate	5	-45	44	3.96
PCC/cerebellum	10	-59	11	5.64
IFG	19	59	27	5.48
IFG	-9	63	25	4.45
OFC	33	49	-13	3.27
Superior frontal gyrus	23	14	59	3.28

AI, anterior insula; IFG, inferior frontal gyrus; MNI, Montreal Neurological Institute; NC, normal control; OFC, orbitofrontal cortex; rCBF, regional cerebral blood flow; STS, superior temporal cortex; WS, Williams syndrome.

**Table S5. Resting PET rCBF**

Anatomical description	MNI coordinate			t value
	X	Y	Z	
Right anterior insula connectivity NC > WS				
ACC	7	29	-5	3.68
AI/OFC	29	17	-17	3.55
AI/OFC	-23	23	-12	3.59
Amygdala	-22	-4	-13	3.07
Right anterior insula connectivity WS > NC				
None				
Left anterior insula connectivity NC > WS				
Medial prefrontal cortex	12	64	5	3.41
ACC	-7	34	11	3.47
Posterior insula	36	-25	9	5.65
Left anterior insula connectivity WS > NC				
Middle cingulate	-3	0	46	3.98

ACC, anterior cingulate cortex; AI, anterior insula; NC, normal control; OFC, orbitofrontal cortex; rCBF, regional cerebral blood flow; WS, Williams syndrome.