

Evidence of widespread metabolite abnormalities in Myalgic Encephalomyelitis/Chronic Fatigue Syndrome: Assessment with whole-brain Magnetic Resonance Spectroscopy.

Brain Imaging and Behavior

Christina Mueller, MS

Department of Psychology, The University of Alabama at Birmingham, 1720 2nd Ave S, Birmingham, AL 35294, United States

Joanne C. Lin, PhD

Department of Psychology, The University of Alabama at Birmingham, 1720 2nd Ave S, Birmingham, AL 35294, United States

Sulaiman Sheriff

Department of Radiology, Miller School of Medicine, University of Miami, 1600 NW 10th Ave #1140, Miami, FL 33136, United States

Andrew A. Maudsley, PhD

Department of Radiology, Miller School of Medicine, University of Miami, 1600 NW 10th Ave #1140, Miami, FL 33136, United States

Jarred W. Younger, PhD (corresponding author)

Department of Psychology, The University of Alabama at Birmingham, 1720 2nd Ave S, Birmingham, AL 35294, United States

younger@uab.edu

P: (205) 975-5821

ROI	Group	Mean	SD	<i>t</i>	<i>p</i>
Calcarine_R	ME/CFS	59.208	11.017	-0.429	0.671
	control	61.133	13.419		
Cerebellum	ME/CFS	65.756	11.568	0.115	0.909
	control	65.283	10.942		
Cingulum_Ant_L	ME/CFS	44.999	12.061	-0.186	0.853
	control	45.795	11.327		
Cingulum_Ant_R	ME/CFS	36.038	15.281	-0.352	0.728
	control	37.682	9.678		
Cingulum_Mid_L	ME/CFS	45.893	12.238	0.328	0.745
	control	44.617	8.761		
Frontal_R	ME/CFS	37.730	10.693	0.303	0.764
	control	36.539	10.853		
Fusiform_R	ME/CFS	54.362	8.316	0.256	0.800
	control	53.401	11.909		
Hippocampus_L	ME/CFS	51.437	13.070	0.591	0.559
	control	48.488	14.250		
Insula_L	ME/CFS	40.328	12.147	0.425	0.674
	control	38.601	9.981		
Insula_R	ME/CFS	47.261	14.044	-0.434	0.668
	control	49.276	11.226		
Lingual_L	ME/CFS	65.429	11.180	-1.226	0.231
	control	70.483	11.405		
Lingual_R	ME/CFS	65.317	9.525	-0.724	0.475
	control	68.239	12.410		
Occipital_R	ME/CFS	50.260	12.302	1.389	0.176
	control	44.165	11.726		
Pallidum_R	ME/CFS	40.868	8.554	-0.006	0.995
	control	40.892	12.332		
Parietal_L	ME/CFS	38.270	9.760	0.252	0.803
	control	37.358	10.052		
Parietal_R	ME/CFS	41.340	10.198	-0.025	0.980
	control	41.427	8.766		
Precuneus_L	ME/CFS	47.928	8.632	-0.649	0.521
	control	50.234	10.708		
Putamen_R	ME/CFS	36.809	8.430	-0.289	0.775
	control	37.918	12.252		
Rolandic_Oper_L	ME/CFS	44.296	10.888	0.279	0.782
	control	43.184	10.938		
Temporal_L	ME/CFS	44.296	9.513	0.723	0.476
	control	41.829	9.188		

Temporal_R	ME/CFS	44.048	10.508	0.012	0.991
	control	44.008	7.339		
Thalamus_R	ME/CFS	53.015	12.968	0.498	0.622
	control	50.648	13.070		

ROI = region of interest; L = left; R = right

Mean cerebral blood flow (CBF) in the ME/CFS (n = 15) and control (n = 15) group, and their standard deviations (SD). *t*-values and corresponding *p*-values are from independent-samples *t*-tests comparing the group means in each region. Df = 28 for all tests. Only regions showing metabolite differences between groups are presented.