

Supplementary Data

Early Emerging Sulcal Patterns are Atypical in Fetuses with Congenital Heart Disease

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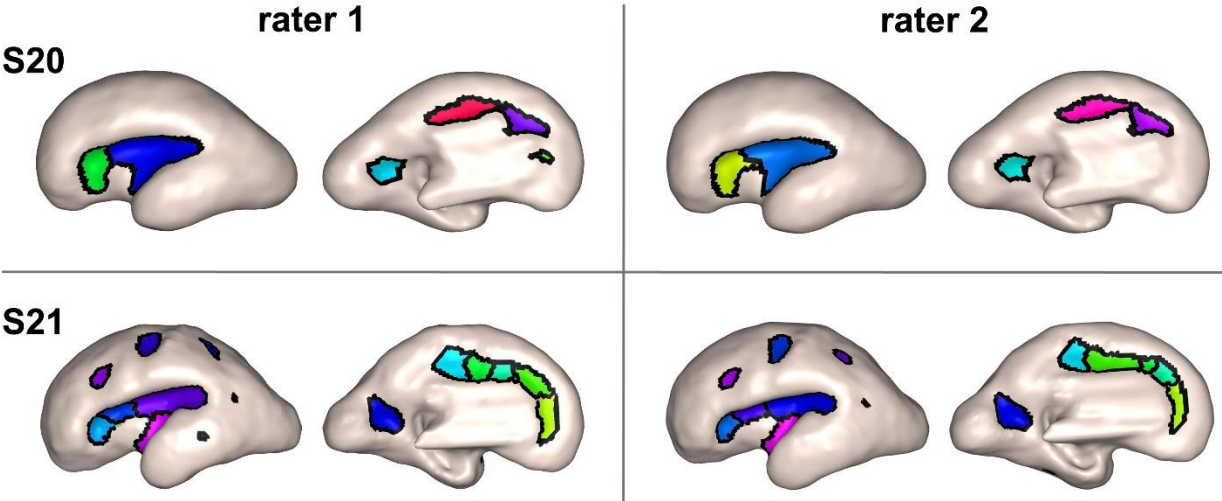
Supplementary Table 1. Sulcal Pattern Similarity Between TD and CHD Groups by Fetal Sex

	Left hemisphere				Right hemisphere			
	TD	CHD	<i>P</i> Value (<i>t</i> -test)	<i>P</i> Value (regression)	TD	CHD	<i>P</i> Value (<i>t</i> -test)	<i>P</i> Value (regression)
Males								
<i>SI</i> Combined features	0.825 (0.025)	0.803 (0.031)	0.091	0.044*	0.816 (0.010)	0.812 (0.020)	0.574	0.493
3D position	0.878 (0.025)	0.860 (0.013)	0.052	0.082	0.876 (0.019)	0.860 (0.021)	0.112	0.202
Sulcal basin area	0.918 (0.018)	0.919 (0.050)	0.970	0.423	0.916 (0.018)	0.928 (0.029)	0.282	0.601
Sulcal depth	0.936 (0.012)	0.922 (0.015)	0.045*	0.086	0.928 (0.012)	0.928 (0.012)	0.975	0.793
<i>SI_a</i> Combined features	0.761 (0.037)	0.753 (0.051)	0.701	0.405	0.761 (0.020)	0.770 (0.022)	0.352	0.578
3D position	0.896 (0.024)	0.880 (0.019)	0.105	0.047*	0.902 (0.015)	0.892 (0.014)	0.177	0.245
Sulcal basin area	0.809 (0.039)	0.811 (0.058)	0.921	0.689	0.809 (0.036)	0.823 (0.036)	0.395	0.743
Sulcal depth	0.942 (0.015)	0.929 (0.014)	0.067	0.125	0.944 (0.013)	0.929 (0.015)	0.033*	0.057
<i>SI_b</i> Combined features	0.837 (0.025)	0.814 (0.020)	0.037*	0.047*	0.827 (0.013)	0.820 (0.019)	0.365	0.519
3D position	0.876 (0.027)	0.859 (0.014)	0.078	0.125	0.871 (0.019)	0.856 (0.020)	0.108	0.183
Sulcal basin area	0.937 (0.015)	0.939 (0.031)	0.983	0.576	0.936 (0.014)	0.945 (0.013)	0.154	0.280
Sulcal depth	0.934 (0.013)	0.920 (0.015)	0.040*	0.073	0.925 (0.013)	0.927 (0.013)	0.747	0.656
Females								
<i>SI</i> Combined features	0.817 (0.021)	0.785 (0.028)	0.020*	0.018*	0.821 (0.018)	0.804 (0.034)	0.245	0.265
3D position	0.872 (0.017)	0.850 (0.021)	0.038*	0.045*	0.867 (0.018)	0.873 (0.023)	0.554	0.499

	Sulcal basin area	0.918 (0.020)	0.894 (0.036)	0.135	0.073	0.929 (0.015)	0.903 (0.032)	0.059	0.052
	Sulcal depth	0.928 (0.024)	0.924 (0.009)	0.670	0.679	0.932 (0.013)	0.923 (0.021)	0.320	0.326
<i>SI_a</i>	Combined features	0.758 (0.034)	0.725 (0.050)	0.141	0.142	0.781 (0.032)	0.736 (0.065)	0.109	0.114
	3D position	0.893 (0.014)	0.871 (0.020)	0.021*	0.023*	0.898 (0.013)	0.898 (0.017)	0.993	0.986
	Sulcal basin area	0.804 (0.038)	0.779 (0.059)	0.332	0.330	0.832 (0.033)	0.773 (0.071)	0.059	0.060
	Sulcal depth	0.939 (0.017)	0.940 (0.013)	0.825	0.808	0.946 (0.013)	0.938 (0.017)	0.307	0.240
<i>SI_b</i>	Combined features	0.827 (0.020)	0.799 (0.025)	0.027*	0.033*	0.826 (0.017)	0.818 (0.028)	0.458	0.475
	3D position	0.868 (0.017)	0.847 (0.022)	0.048*	0.056	0.862 (0.019)	0.869 (0.022)	0.538	0.502
	Sulcal basin area	0.936 (0.015)	0.919 (0.025)	0.115	0.103	0.944 (0.012)	0.927 (0.022)	0.086	0.099
	Sulcal depth	0.926 (0.026)	0.920 (0.010)	0.513	0.507	0.930 (0.013)	0.919 (0.021)	0.263	0.279

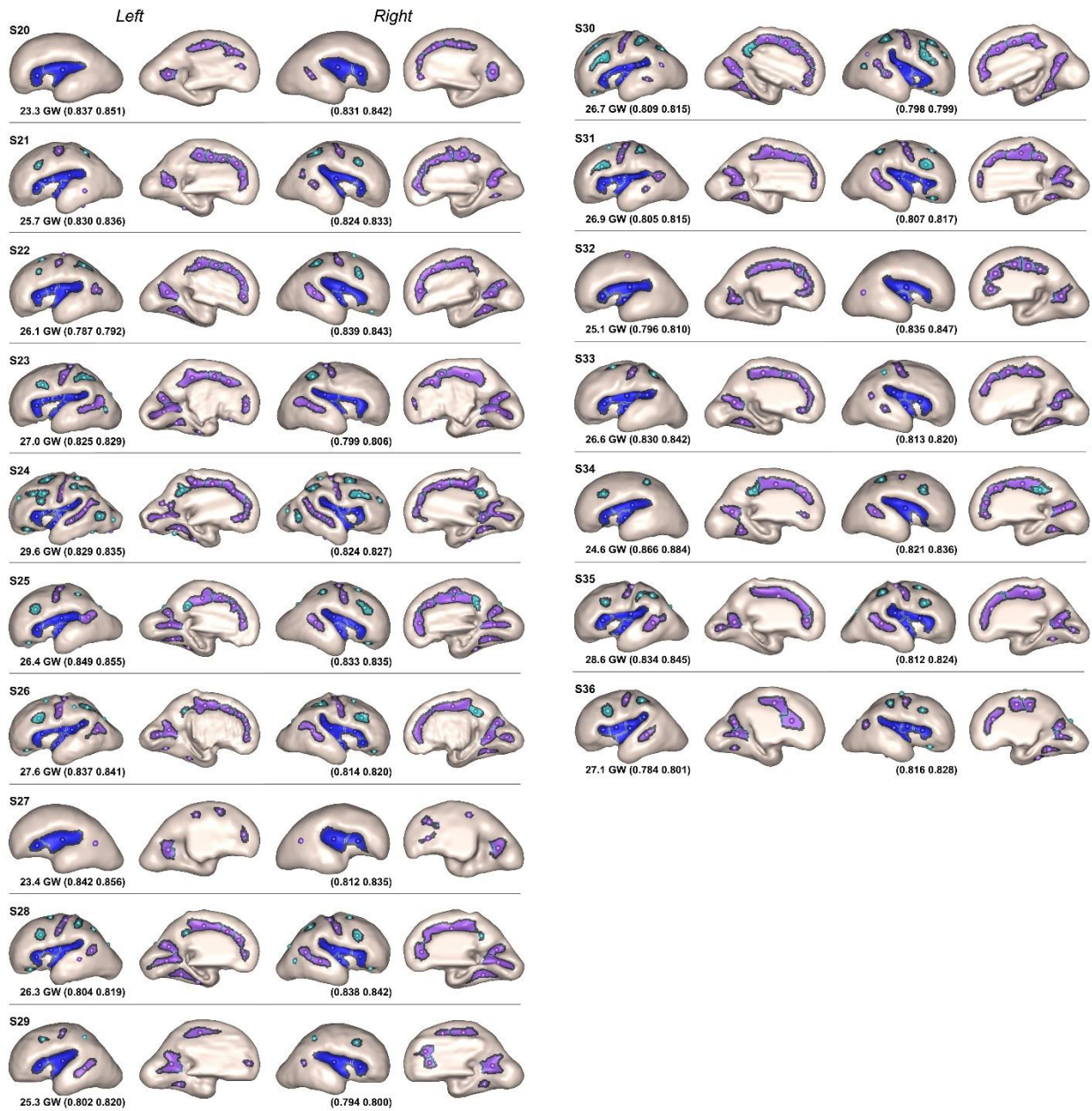
Data: mean (standard deviation). *SI*: Similarity of the whole sulcal pattern, *SI_a*: Similarity between corresponding sulcal basins, *SI_b*: Similarity of intersulcal relationship. * $P < 0.05$.

Supplementary Figure 1. Cortical surfaces and sulcal basin identification from two raters (different volume image segmentation) for two TD subjects (subject 20 and 21).



Supplementary Figure 2. Individual cortical surfaces for all TD and CHD fetuses. Each circle represents a sulcal basin in each region for the Sylvian fissure (blue), early emerging sulci (purple), and late emerging sulci (aqua). Subject IDs (S1 - S36) correspond to the IDs shown in Table 1. Data: (S_i / S_{i_b}), S_i : Sulcal pattern similarity to the templates of the whole sulcal pattern using combined features, S_{i_b} : Sulcal pattern similarity of intersulcal relationship using combined features.

Individual cortical surfaces for TD fetuses



Individual cortical surfaces for CHD fetuses

