

Supplementary Material

1 Supplementary material from the results

1.1 Motor imagery

Table 1. Comparison between alpha ERSP and baseline for MI

Region	Phase	Mean (dB)	SE	Z	p	p-FDR	r
C3	Menstrual	-0.644	0.177	-3.178**	0.001	-	0.410
	Follicular	-0.776	0.237	-2.684**	0.007	-	0.347
	Luteal	-0.541	0.179	-2.787**	0.005	-	0.360
C4	Menstrual	-0.537	0.216	-2.314*	0.021	-	0.299
	Follicular	-0.602	0.251	-2.108*	0.035	-	0.272
	Luteal	-0.207	0.187	-0.956	0.339	-	0.123
Left prefrontal	Menstrual	0.121	0.218	0.566	0.572	0.910	0.073
	Follicular	0.004	0.165	-0.278	0.781	0.868	0.036
	Luteal	0.186	0.157	0.998	0.318	0.637	0.129
Right prefrontal	Menstrual	-0.008	0.215	0.134	0.894	0.910	0.017
	Follicular	-0.081	0.175	-0.607	0.544	0.777	0.078
	Luteal	0.152	0.172	0.730	0.465	0.663	0.094
Left frontal	Menstrual	-0.025	0.186	-0.113	0.910	0.910	0.015
	Follicular	-0.041	0.168	-0.710	0.478	0.777	0.092
	Luteal	0.167	0.154	0.812	0.417	0.663	0.105
Medial frontal	Menstrual	-0.240	0.172	-1.018	0.309	0.772	0.131
	Follicular	-0.253	0.140	-1.759	0.079	0.393	0.227
	Luteal	-0.019	0.145	-0.627	0.530	0.663	0.081
Right frontal	Menstrual	-0.167	0.186	-0.710	0.478	0.910	0.092
	Follicular	-0.244	0.150	-1.491	0.136	0.445	0.193
	Luteal	0.060	0.163	0.154	0.877	0.877	0.020
Medial central	Menstrual	-0.272	0.172	-1.306	0.192	0.737	0.169
	Follicular	-0.280	0.169	-1.347	0.178	0.445	0.174
	Luteal	0.093	0.144	0.504	0.614	0.683	0.065
Left parietal	Menstrual	0.063	0.224	0.381	0.704	0.910	0.049
	Follicular	-0.021	0.202	0.134	0.894	0.894	0.017
	Luteal	0.318	0.180	1.450	0.147	0.368	0.187
Medial parietal	Menstrual	0.087	0.259	0.257	0.797	0.910	0.033
	Follicular	0.067	0.220	0.360	0.719	0.868	0.046

	Luteal	0.453	0.213	1.944	0.052	0.173	0.251
Right parietal	Menstrual	0.321	0.214	1.224	0.221	0.737	0.158
	Follicular	0.252	0.197	0.895	0.371	0.742	0.116
	Luteal	0.561	0.198	2.273	0.023	0.115	0.293
Occipital	Menstrual	0.610	0.236	2.088	0.037	0.368	0.270
	Follicular	0.573	0.179	2.910*	0.004	0.036	0.376
	Luteal	0.726	0.202	2.787	0.005	0.053	0.360

P-value: < 0.001 (***). < 0.01 (**). < 0.05 (*); FDR correction.

Table 2. Comparison between beta ERSP and baseline for MI

Region	Phase	Mean (dB)	SE	Z	p	p-FDR	r
C3	Menstrual	-0.644	0.177	-3.178	0.001	-	0.410
	Follicular	-0.776	0.237	-2.684	0.007	-	0.347
	Luteal	-0.541	0.179	-2.787	0.005	-	0.360
C4	Menstrual	-0.537	0.216	-2.314	0.021	-	0.299
	Follicular	-0.602	0.251	-2.108	0.035	-	0.272
	Luteal	-0.207	0.187	-0.956	0.339	-	0.123
Left prefrontal	Menstrual	-0.324	0.066	-3.754***	<0.001	<0.001	0.485
	Follicular	-0.449	0.074	-4.206***	<0.001	<0.001	0.543
	Luteal	-0.261	0.063	-3.363***	0.001	0.001	0.434
Right prefrontal	Menstrual	-0.366	0.074	-3.774***	<0.001	<0.001	0.487
	Follicular	-0.491	0.078	-4.268***	<0.001	<0.001	0.551
	Luteal	-0.309	0.070	-3.569***	<0.001	0.001	0.461
Left frontal	Menstrual	-0.472	0.083	-4.165***	<0.001	<0.001	0.538
	Follicular	-0.631	0.080	-4.638***	<0.001	<0.001	0.599
	Luteal	-0.387	0.064	-4.062***	<0.001	<0.001	0.524
Medial frontal	Menstrual	-0.604	0.083	-4.494***	<0.001	<0.001	0.580
	Follicular	-0.748	0.099	-4.720***	<0.001	<0.001	0.609
	Luteal	-0.545	0.069	-4.700***	<0.001	<0.001	0.607
Right frontal	Menstrual	-0.483	0.080	-4.206***	<0.001	<0.001	0.543
	Follicular	-0.578	0.072	-4.535***	<0.001	<0.001	0.586
	Luteal	-0.426	0.073	-4.021***	<0.001	<0.001	0.519
Medial central	Menstrual	-0.526	0.107	-3.898***	<0.001	<0.001	0.503
	Follicular	-0.642	0.108	-4.638***	<0.001	<0.001	0.599
	Luteal	-0.420	0.100	-3.527***	<0.001	0.001	0.455
Left parietal	Menstrual	-0.237	0.091	-2.293***	0.022	0.027	0.296
	Follicular	-0.243	0.097	-2.252***	0.024	0.030	0.291
	Luteal	-0.091	0.090	-1.100	0.271	0.387	0.142
Medial parietal	Menstrual	-0.309	0.084	-3.075***	0.002	0.003	0.397
	Follicular	-0.359	0.081	-3.754***	<0.001	<0.001	0.485
	Luteal	-0.092	0.096	-0.854	0.393	0.437	0.110

Right parietal	Menstrual	-0.093	0.089	-1.039	0.299	0.332	0.134
	Follicular	-0.190	0.084	-1.923	0.054	0.061	0.248
	Luteal	0.011	0.099	0.093	0.926	0.926	0.012
Occipital	Menstrual	0.001	0.097	0.154	0.877	0.877	0.020
	Follicular	-0.064	0.091	-0.257	0.797	0.797	0.033
	Luteal	0.060	0.094	0.998	0.318	0.398	0.129

P-value: < 0.001 (***), < 0.01 (**), < 0.05 (*); FDR correction.

Table 3. Effect of menstrual cycle phases in alpha ERSP for MI

Region	χ^2	df	p	p-FDR	W	post hoc
C3	2.600	2	0.272	-	0.043	
C4	1.267	2	0.531	-	0.021	
Left prefrontal	0.200	2	0.905	0.905	0.003	
Right prefrontal	0.467	2	0.792	0.905	0.008	
Left frontal	1.667	2	0.435	0.828	0.028	
Medial frontal	0.200	2	0.905	0.905	0.003	
Right frontal	4.067	2	0.131	0.436	0.068	
Medial central	11.667*	2	0.003	0.029	0.194	luteal < follicular luteal < menstrual
Left parietal	2.467	2	0.291	0.728	0.041	
Medial parietal	6.467	2	0.039	0.197	0.108	
Right parietal	1.067	2	0.587	0.838	0.018	
Occipital	1.400	2	0.497	0.828	0.023	

P-value: < 0.001 (***), < 0.01 (**), < 0.05 (*), > 0.05 (ns); post hoc with Bonferroni correction.

Table 4. Effect of menstrual cycle phases on beta ERSP in MI

Region	χ^2	df	p	p-FDR	W	post hoc
C3	8.467	2	0.014	-	0.141	follicular > menstrual follicular > luteal
C4	2.467	2	0.291	-	0.041	
Left prefrontal	5.267	2	0.072	0.132	0.088	
Right prefrontal	5.067	2	0.079	0.132	0.084	
Left frontal	11.400*	2	0.003	0.017	0.190	follicular > menstrual follicular > luteal
Medial frontal	4.067	2	0.131	0.187	0.068	
Right frontal	8.600	2	0.014	0.045	0.143	follicular > menstrual follicular > luteal
Medial central	2.867	2	0.239	0.298	0.048	
Left parietal	2.600	2	0.273	0.303	0.043	
Medial parietal	12.867*	2	0.002	0.016	0.214	luteal < follicular luteal < menstrual
Right parietal	5.267	2	0.072	0.132	0.088	
Occipital	0.467	2	0.792	0.792	0.008	

P-value: < 0.001 (***), < 0.01 (**), < 0.05 (*), > 0.05 (ns); post hoc with Bonferroni correction.

Table 5. Correlation between alpha ERSP in MI and hormonal level

Regions	Estradiol			Progesterone			Progesterone/Estradiol		
	rho	p-val	p-FDR	rho	p-val	p-FDR	rho	p-val	p-FDR
Menstrual phase									
C3	-0.24	0.20	-	-0.20	0.29	-	0.03	0.90	-
C4	0.16	0.41	-	0.03	0.86	-	-0.14	0.46	-
Left prefrontal	-0.17	0.36	0.44	-0.10	0.59	0.98	-0.003	0.99	0.99
Right prefrontal	-0.21	0.26	0.44	-0.05	0.80	0.98	0.07	0.70	0.99
Left frontal	-0.16	0.41	0.46	0.00	0.98	0.98	0.06	0.77	0.99
Medial frontal	-0.20	0.28	0.44	-0.09	0.65	0.98	0.05	0.79	0.99
Right frontal	-0.20	0.28	0.44	-0.03	0.89	0.98	0.08	0.69	0.99
Medial central	-0.06	0.76	0.76	0.09	0.63	0.98	0.08	0.67	0.99
Left parietal	-0.19	0.32	0.44	-0.07	0.71	0.98	0.03	0.86	0.99
Medial parietal	-0.20	0.28	0.44	0.09	0.63	0.98	0.17	0.37	0.99
Right parietal	-0.20	0.28	0.44	-0.04	0.82	0.98	0.02	0.92	0.99
Occipital	-0.27	0.15	0.44	-0.09	0.65	0.98	0.05	0.80	0.99
Follicular phase									
C3	0.02	0.93	-	-0.11	0.58	-	-0.06	0.74	-
C4	0.07	0.73	-	0.02	0.93	-	-0.02	0.90	-
Left prefrontal	-0.04	0.83	0.95	-0.03	0.86	0.93	0.06	0.75	1.00
Right prefrontal	-0.01	0.95	0.95	-0.12	0.54	0.93	-0.03	0.87	1.00
Left frontal	0.13	0.48	0.95	0.09	0.63	0.93	-0.04	0.83	1.00
Medial frontal	0.16	0.39	0.95	-0.17	0.38	0.93	-0.16	0.40	1.00
Right frontal	-0.03	0.89	0.95	-0.10	0.61	0.93	0.01	0.95	1.00
Medial central	0.04	0.85	0.95	-0.02	0.93	0.93	0.00	1.00	1.00
Left parietal	-0.03	0.88	0.95	-0.16	0.40	0.93	-0.02	0.90	1.00
Medial parietal	0.04	0.83	0.95	0.02	0.91	0.93	0.01	0.95	1.00
Right parietal	0.17	0.38	0.95	0.17	0.37	0.93	-0.03	0.86	1.00
Occipital	-0.01	0.95	0.95	0.07	0.70	0.93	0.08	0.67	1.00
Luteal phase									
C3	-0.09	0.64	-	-0.31	0.10	-	-0.17	0.37	-
C4	0.02	0.90	-	0.09	0.63	-	-0.01	0.95	-
Left prefrontal	-0.25	0.18	0.21	-0.12	0.53	0.67	-0.03	0.86	0.99
Right prefrontal	-0.34	0.07	0.17	-0.26	0.16	0.44	-0.09	0.63	0.99
Left frontal	-0.25	0.19	0.21	-0.08	0.67	0.75	-0.02	0.91	0.99
Medial frontal	-0.25	0.19	0.21	-0.31	0.10	0.44	-0.19	0.30	0.99
Right frontal	-0.28	0.13	0.21	-0.25	0.18	0.44	-0.11	0.55	0.99
Medial central	-0.19	0.31	0.31	-0.19	0.32	0.54	-0.10	0.59	0.99
Left parietal	-0.34	0.06	0.17	-0.25	0.19	0.44	-0.04	0.83	0.99
Medial parietal	-0.37	0.05	0.17	-0.15	0.44	0.62	0.04	0.85	0.99
Right parietal	-0.28	0.13	0.21	-0.05	0.80	0.80	0.05	0.78	0.99
Occipital	-0.35	0.06	0.17	-0.23	0.22	0.44	0.002	0.99	0.99

Table 6. Correlation between beta ERSP in MI and hormonal level

Regions	Estradiol			Progesterone			Progesterone / Estradiol		
	rho	p-val	p- FDR	rho	p-val	p- FDR	rho	p-val	p- FDR
Menstrual phase									
C3	0.02	0.91	-	0.09	0.63	-	0.14	0.45	-
C4	0.23	0.23	-	0.13	0.50	-	-0.07	0.71	-
Left prefrontal	-0.01	0.97	0.97	0.03	0.89	0.96	0.03	0.87	0.87
Right prefrontal	0.14	0.46	0.97	0.01	0.96	0.96	-0.06	0.76	0.87
Left frontal	0.09	0.64	0.97	-0.04	0.85	0.96	-0.05	0.79	0.87
Medial frontal	0.30	0.10	0.79	-0.05	0.79	0.96	-0.16	0.39	0.87
Right frontal	0.20	0.29	0.96	0.03	0.89	0.96	-0.06	0.77	0.87
Medial central	0.26	0.16	0.79	-0.04	0.83	0.96	-0.21	0.26	0.87
Left parietal	-0.01	0.95	0.97	-0.09	0.63	0.96	-0.08	0.68	0.87
Medial parietal	-0.06	0.77	0.97	0.05	0.81	0.96	0.05	0.78	0.87
Right parietal	0.02	0.91	0.97	-0.02	0.90	0.96	-0.09	0.64	0.87
Occipital	-0.04	0.85	0.97	-0.22	0.24	0.96	-0.19	0.31	0.87
Follicular phase									
C3	-0.18	0.34	-	-0.19	0.33	-	0.12	0.52	-
C4	0.28	0.13	-	-0.14	0.45	-	-0.22	0.24	-
Left prefrontal	-0.21	0.28	0.97	-0.31	0.09	0.43	0.15	0.44	0.97
Right prefrontal	-0.07	0.71	0.97	-0.11	0.56	0.62	0.08	0.68	0.97
Left frontal	-0.14	0.47	0.97	-0.18	0.34	0.48	0.11	0.55	0.97
Medial frontal	-0.01	0.96	0.97	-0.21	0.26	0.44	-0.03	0.88	0.97
Right frontal	-0.07	0.72	0.97	-0.08	0.68	0.68	0.13	0.48	0.97
Medial central	0.08	0.68	0.97	-0.33	0.08	0.43	-0.12	0.52	0.97
Left parietal	-0.05	0.81	0.97	-0.23	0.21	0.43	0.01	0.97	0.97
Medial parietal	0.10	0.59	0.97	-0.28	0.14	0.43	-0.13	0.51	0.97
Right parietal	-0.01	0.97	0.97	-0.15	0.43	0.54	0.03	0.89	0.97
Occipital	0.01	0.96	0.97	-0.25	0.18	0.43	-0.02	0.93	0.97
Luteal phase									
C3	-0.19	0.32	-	-0.25	0.18	-	-0.15	0.44	-
C4	0.02	0.91	-	-0.04	0.85	-	-0.20	0.28	-
Left prefrontal	-0.19	0.32	0.42	-0.24	0.20	0.68	-0.17	0.36	0.97
Right prefrontal	-0.31	0.10	0.24	-0.10	0.59	0.73	0.01	0.97	0.97
Left frontal	-0.18	0.34	0.42	-0.24	0.20	0.68	-0.17	0.36	0.97
Medial frontal	-0.14	0.47	0.52	-0.08	0.67	0.73	-0.07	0.71	0.97
Right frontal	-0.21	0.26	0.42	-0.07	0.73	0.73	-0.03	0.88	0.97
Medial central	-0.06	0.75	0.75	0.09	0.62	0.73	-0.08	0.68	0.97
Left parietal	-0.45	0.01	0.14	-0.38	0.04	0.40	-0.18	0.33	0.97
Medial parietal	-0.27	0.15	0.31	-0.13	0.49	0.73	-0.09	0.62	0.97
Right parietal	-0.40	0.03	0.15	-0.20	0.29	0.73	-0.04	0.83	0.97

Occipital	-0.34	0.07	0.23	-0.16	0.41	0.73	-0.05	0.81	0.97
Uncorrected P-value: <0.05 (#)									

1.2 Action observation

Table 7. Comparison between alpha ERSP and baseline for AO

Region	Phase	Mean (dB)	SE	Z	p	p-FDR	r
C3	Menstrual	-0.040	0.206	0.072	0.943	-	0.009
	Follicular	0.228	0.142	1.656	0.098	-	0.214
	Luteal	0.050	0.159	0.195	0.845	-	0.025
C4	Menstrual	-0.361	0.225	-1.347	0.178	-	0.174
	Follicular	-0.255	0.147	-1.759	0.079	-	0.227
	Luteal	-0.219	0.190	-1.450	0.147	-	0.187
Left prefrontal	Menstrual	-0.352	0.229	-1.286	0.199	0.338	0.166
	Follicular	0.116	0.192	0.483	0.629	0.748	0.062
	Luteal	-0.117	0.214	-0.627	0.530	0.748	0.081
Right prefrontal	Menstrual	-0.349	0.226	-1.183	0.237	0.338	0.153
	Follicular	0.122	0.202	0.422	0.673	0.748	0.054
	Luteal	-0.101	0.209	-0.648	0.517	0.748	0.084
Left frontal	Menstrual	-0.344	0.231	-1.203	0.229	0.338	0.155
	Follicular	0.152	0.201	0.607	0.544	0.748	0.078
	Luteal	-0.118	0.189	-0.792	0.428	0.748	0.102
Medial frontal	Menstrual	-0.406	0.212	-1.676	0.094	0.338	0.216
	Follicular	-0.105	0.167	-0.668	0.504	0.748	0.086
	Luteal	-0.195	0.177	-1.224	0.221	0.737	0.158
Right frontal	Menstrual	-0.355	0.227	-1.203	0.229	0.338	0.155
	Follicular	-0.013	0.160	-0.154	0.877	0.877	0.020
	Luteal	-0.179	0.192	-0.936	0.349	0.748	0.121
Medial central	Menstrual	0.266	0.217	1.224	0.221	0.338	0.158
	Follicular	0.535	0.175	2.540	0.011	0.055	0.328
	Luteal	0.610	0.253	1.820	0.069	0.687	0.235
Left parietal	Menstrual	-0.047	0.313	0.154	0.877	0.894	0.020
	Follicular	0.438	0.230	1.656	0.098	0.266	0.214
	Luteal	0.249	0.292	0.422	0.673	0.748	0.054
Medial parietal	Menstrual	0.517	0.318	1.656	0.098	0.338	0.214
	Follicular	0.917	0.282	2.725	0.006	0.055	0.352
	Luteal	0.773	0.360	1.450	0.147	0.735	0.187
Right parietal	Menstrual	-0.119	0.329	-0.463	0.644	0.804	0.060
	Follicular	0.553	0.297	1.429	0.153	0.306	0.185
	Luteal	0.266	0.337	0.298	0.766	0.766	0.039
Occipital	Menstrual	-0.037	0.336	0.134	0.894	0.894	0.017

	Follicular	0.498	0.263	1.615	0.106	0.266	0.208
	Luteal	0.245	0.297	0.463	0.644	0.748	0.060

Table 8. Comparison between beta ERSP and baseline for AO

Region	Phase	Mean (dB)	SE	Z	p	p-FDR	r
C3	Menstrual	-0.270	0.083	-3.054**	0.002	-	0.394
	Follicular	-0.220	0.084	-2.355*	0.019	-	0.304
	Luteal	-0.307	0.078	-3.157**	0.002	-	0.408
C4	Menstrual	-0.495	0.094	-3.754***	<0.001	-	0.485
	Follicular	-0.412	0.091	-3.671***	<0.001	-	0.474
	Luteal	-0.448	0.102	-3.651***	<0.001	-	0.471
Left prefrontal	Menstrual	-0.276	0.070	-3.301**	0.001	0.002	0.426
	Follicular	-0.143	0.046	-2.787*	0.005	0.013	0.360
	Luteal	-0.215	0.060	-3.178**	0.001	0.003	0.410
Right prefrontal	Menstrual	-0.371	0.067	-4.186***	<0.001	<0.001	0.540
	Follicular	-0.135	0.050	-2.335*	0.020	0.033	0.301
	Luteal	-0.218	0.059	-3.137**	0.002	0.003	0.405
Left frontal	Menstrual	-0.337	0.062	-4.083***	<0.001	<0.001	0.527
	Follicular	-0.267	0.058	-3.589**	<0.001	0.001	0.463
	Luteal	-0.338	0.058	-4.247***	<0.001	<0.001	0.548
Medial frontal	Menstrual	-0.472	0.069	-4.535***	<0.001	<0.001	0.586
	Follicular	-0.372	0.061	-4.391***	<0.001	<0.001	0.567
	Luteal	-0.473	0.064	-4.535***	<0.001	<0.001	0.586
Right frontal	Menstrual	-0.418	0.076	-3.939***	<0.001	<0.001	0.509
	Follicular	-0.276	0.058	-3.857**	<0.001	0.001	0.498
	Luteal	-0.304	0.057	-3.980***	<0.001	<0.001	0.514
Medial central	Menstrual	-0.260	0.077	-3.137**	0.002	0.002	0.405
	Follicular	-0.164	0.075	-2.335*	0.020	0.033	0.301
	Luteal	-0.200	0.089	-2.314*	0.021	0.034	0.299
Left parietal	Menstrual	-0.410	0.111	-3.630**	<0.001	0.001	0.469
	Follicular	-0.139	0.084	-1.532	0.125	0.179	0.198
	Luteal	-0.239	0.104	-2.232*	0.026	0.037	0.288
Medial parietal	Menstrual	-0.108	0.108	-0.689	0.491	0.491	0.089
	Follicular	-0.006	0.096	-0.134	0.894	0.894	0.017
	Luteal	-0.091	0.126	-1.347	0.178	0.178	0.174
Right parietal	Menstrual	-0.289	0.115	-2.211*	0.027	0.034	0.285
	Follicular	-0.062	0.119	-0.998	0.318	0.398	0.129
	Luteal	-0.254	0.124	-1.923	0.054	0.068	0.248
Occipital	Menstrual	-0.258	0.121	-2.005	0.045	0.050	0.259
	Follicular	0.004	0.104	-0.339	0.734	0.816	0.044
	Luteal	-0.175	0.121	-1.409	0.159	0.177	0.182

P-value: < 0.001 (***). < 0.01 (**). < 0.05 (*); FDR correction.

Table 9. Menstrual cycle effect in alpha ERSP during AO

Region	χ^2	df	p	p-FDR	W
C3	1.867	2	0.393	-	0.031
C4	0.800	2	0.670	-	0.013
Left prefrontal	5.600	2	0.061	0.203	0.093
Right prefrontal	4.267	2	0.118	0.245	0.071
Left frontal	4.200	2	0.122	0.245	0.070
Medial frontal	3.467	2	0.177	0.294	0.058
Right frontal	1.667	2	0.435	0.543	0.028
Medial central	1.267	2	0.531	0.590	0.021
Left parietal	6.200	2	0.045	0.203	0.103
Medial parietal	0.600	2	0.741	0.741	0.010
Right parietal	6.467	2	0.039	0.203	0.108
Occipital	2.400	2	0.301	0.430	0.040

Table 10. Menstrual cycle effect in beta ERSP during AO

Region	χ^2	df	p	p-FDR	W
C3	1.400	2	0.497	-	0.023
C4	1.267	2	0.531	-	0.021
Left prefrontal	1.267	2	0.531	0.652	0.021
Right prefrontal	3.800	2	0.150	0.488	0.063
Left frontal	1.067	2	0.587	0.652	0.018
Medial frontal	2.400	2	0.301	0.502	0.040
Right frontal	2.400	2	0.301	0.502	0.040
Medial central	0.467	2	0.792	0.792	0.008
Left parietal	3.800	2	0.150	0.488	0.063
Medial parietal	1.067	2	0.587	0.652	0.018
Right parietal	3.267	2	0.195	0.488	0.054
Occipital	3.267	2	0.195	0.488	0.054

Table 11. Correlation between alpha ERSP in AO and hormonal level

Regions	Estradiol			Progesterone			Progesterone / Estradiol		
	rho	p-val	p- FDR	rho	p	p- FDR	rho	p	p- FDR
Menstrual phase									
C3	-0.22	0.23	-	-0.33	0.07	-	-0.20	0.29	-
C4	-0.08	0.65	-	-0.20	0.28	-	-0.18	0.33	-
Left prefrontal	-0.07	0.70	0.73	-0.16	0.40	0.49	-0.13	0.48	0.69
Right prefrontal	-0.17	0.38	0.73	-0.14	0.47	0.49	-0.08	0.69	0.69
Left frontal	-0.15	0.44	0.73	-0.13	0.49	0.49	-0.08	0.69	0.69
Medial frontal	-0.07	0.71	0.73	-0.24	0.20	0.41	-0.18	0.34	0.68

Right frontal	-0.10	0.59	0.73	-0.15	0.44	0.49	-0.10	0.61	0.69
Medial central	-0.07	0.73	0.73	-0.29	0.12	0.41	-0.29	0.11	0.68
Left parietal	-0.12	0.52	0.73	-0.26	0.17	0.41	-0.19	0.32	0.68
Medial parietal	-0.10	0.61	0.73	-0.23	0.22	0.41	-0.22	0.23	0.68
Right parietal	-0.17	0.37	0.73	-0.27	0.16	0.41	-0.23	0.23	0.68
Occipital	-0.21	0.27	0.73	-0.22	0.25	0.41	-0.13	0.50	0.69
Follicular phase									
C3	0.49*	0.01	-	-0.28	0.14	-	-0.57**	0.001	-
C4	0.24	0.19	-	0.01	0.95	-	-0.21	0.27	-
Left prefrontal	0.46*	0.01	0.02	-0.03	0.88	0.97	-0.41*	0.03	0.04
Right prefrontal	0.46*	0.01	0.02	-0.09	0.63	0.97	-0.44*	0.01	0.04
Left frontal	0.48*	0.01	0.02	-0.11	0.56	0.97	-0.45*	0.01	0.04
Medial frontal	0.56*	0.00	0.02	-0.11	0.57	0.97	-0.51*	0.00	0.04
Right frontal	0.50*	0.01	0.02	-0.06	0.74	0.97	-0.46*	0.01	0.04
Medial central	0.36	0.05	0.05	-0.19	0.31	0.97	-0.35	0.06	0.08
Left parietal	0.36	0.05	0.05	0.08	0.68	0.97	-0.28	0.14	0.14
Medial parietal	0.36	0.05	0.05	-0.13	0.51	0.97	-0.32	0.09	0.10
Right parietal	0.37	0.04	0.05	-0.01	0.97	0.97	-0.33	0.07	0.09
Occipital	0.45*	0.01	0.02	0.03	0.88	0.97	-0.42*	0.02	0.04
Luteal phase									
C3	0.29	0.12	-	0.30	0.11	-	0.11	0.55	-
C4	0.18	0.33	-	0.28	0.13	-	0.13	0.48	-
Left prefrontal	0.26	0.17	0.30	0.42	0.02	0.08	0.15	0.42	0.87
Right prefrontal	0.21	0.27	0.30	0.39	0.03	0.08	0.15	0.42	0.87
Left frontal	0.30	0.11	0.30	0.43	0.02	0.08	0.14	0.45	0.87
Medial frontal	0.32	0.08	0.30	0.34	0.06	0.11	0.06	0.73	0.87
Right frontal	0.27	0.14	0.30	0.39	0.03	0.08	0.12	0.54	0.87
Medial central	0.29	0.13	0.30	0.28	0.13	0.16	0.02	0.90	0.90
Left parietal	0.24	0.20	0.30	0.32	0.09	0.13	0.08	0.67	0.87
Medial parietal	0.22	0.25	0.30	0.38	0.04	0.08	0.15	0.42	0.87
Right parietal	0.21	0.27	0.30	0.24	0.20	0.20	0.05	0.78	0.87
Occipital	0.13	0.48	0.48	0.24	0.19	0.20	0.10	0.59	0.87

P-value: < 0.001 (***), < 0.01 (**), < 0.05 (*); FDR correction.

Table 12. Correlation between beta ERSP in AO and hormonal level

Regions	Estradiol			Progesterone			Progesterone / Estradiol		
	rho	p-val	p- FDR	rho	p-val	p- FDR	rho	p-val	p- FDR
Menstrual phase									
C3	-0.17	0.37	-	-0.09	0.62	-	0.05	0.79	-
C4	0.01	0.94	-	-0.01	0.94	-	-0.05	0.77	-
Left prefrontal	0.06	0.74	0.94	0.01	0.96	0.96	0.01	0.94	0.94
Right prefrontal	0.01	0.94	0.94	-0.03	0.87	0.96	0.03	0.89	0.94

Left frontal	-0.03	0.89	0.94	-0.07	0.73	0.91	0.06	0.76	0.94
Medial frontal	0.10	0.60	0.94	-0.15	0.43	0.72	-0.15	0.42	0.84
Right frontal	0.18	0.35	0.94	-0.08	0.67	0.91	-0.10	0.61	0.94
Medial central	-0.02	0.92	0.94	-0.20	0.30	0.63	-0.17	0.36	0.84
Left parietal	-0.07	0.71	0.94	-0.19	0.32	0.63	-0.08	0.65	0.94
Medial parietal	0.08	0.69	0.94	-0.24	0.20	0.63	-0.24	0.19	0.84
Right parietal	-0.06	0.76	0.94	-0.26	0.17	0.63	-0.21	0.27	0.84
Occipital	-0.02	0.93	0.94	-0.25	0.19	0.63	-0.22	0.25	0.84
Follicular phase									
C3	0.31	0.09	-	-0.24	0.20	-	-0.36	0.05	-
C4	0.33	0.07	-	-0.11	0.58	-	-0.30	0.11	-
Left prefrontal	0.42*	0.02	0.04	-0.09	0.63	0.96	-0.34	0.06	0.09
Right prefrontal	0.25	0.18	0.18	0.04	0.84	0.96	-0.19	0.31	0.31
Left frontal	0.45*	0.01	0.04	-0.20	0.30	0.75	-0.49	0.01	0.07
Medial frontal	0.29	0.12	0.13	-0.22	0.23	0.75	-0.34	0.06	0.09
Right frontal	0.42*	0.02	0.04	0.05	0.80	0.96	-0.32	0.08	0.09
Medial central	0.30	0.10	0.13	-0.25	0.19	0.75	-0.36	0.05	0.09
Left parietal	0.42*	0.02	0.04	-0.03	0.86	0.96	-0.37	0.04	0.09
Medial parietal	0.43*	0.02	0.04	-0.24	0.21	0.75	-0.41	0.02	0.08
Right parietal	0.40*	0.03	0.04	0.02	0.93	0.96	-0.33	0.08	0.09
Occipital	0.48*	0.01	0.04	0.01	0.96	0.96	-0.42	0.02	0.08
Luteal phase									
C3	0.12	0.53	-	0.39	0.03	-	0.23	0.22	-
C4	0.21	0.26	-	0.13	0.49	-	-0.13	0.48	-
Left prefrontal	0.01	0.95	1.00	0.21	0.27	0.30	0.17	0.36	0.73
Right prefrontal	-0.14	0.45	1.00	0.28	0.14	0.23	0.30	0.11	0.73
Left frontal	0.20	0.28	1.00	0.34	0.07	0.23	0.12	0.54	0.73
Medial frontal	0.06	0.76	1.00	0.19	0.32	0.32	0.08	0.66	0.73
Right frontal	0.04	0.82	1.00	0.30	0.11	0.23	0.13	0.48	0.73
Medial central	0.18	0.33	1.00	0.24	0.19	0.24	-0.01	0.95	0.95
Left parietal	0.07	0.73	1.00	0.26	0.16	0.23	0.09	0.65	0.73
Medial parietal	0.10	0.60	1.00	0.33	0.08	0.23	0.14	0.47	0.73
Right parietal	0.03	0.88	1.00	0.27	0.15	0.23	0.16	0.38	0.73
Occipital	0.001	1.00	1.00	0.28	0.13	0.23	0.20	0.28	0.73

P-value: < 0.001 (***), < 0.01 (**), < 0.05 (*); FDR correction.