

# **Olfactory epithelium stimulation using rhythmic nasal air-puffs improves the cognitive performance of individuals with acute sleep deprivation-**

## **Supplementary material**

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## Supplementary materials and methods

Table S1. Persian version of cognitive disability questionnaire

ردیف	سوالات	مشکل	نمایشگر	تاریخی	آغاز	همینه
1	به خاطر آوردن کارهایی که قصد انجام دادن آنها را دارم، مشکل است.					
2	به خاطر آوردن وقایعی که هفت‌گشته برایم روی داده است، مشکل است.					
3	اسامی افرادی که هر روز با آنها سر و کار دارم، یادم می‌رود.					
4	شناسابی افرادی که قبلاً ملاقات کرده‌اند ، مشکل است.					
5	من فراموش می‌کنم به چه منظوری از خانه بیرون آمده‌ام.					
6	در گفتگو موضوع مکالمه را فراموش می‌کنم و دائم حاشیه می‌روم.					
7	انجام همزمان دو کار برایم مشکل است و حواسم را پرت می‌کند.					
8	تغیر عادت موجب احساس ناراحتی و تشویش در من می‌شود.					
9	پادگیری مهارت‌های جدید برایم سخت است.					
10	من با کوچکترین صدای تمرکزم از بین می‌رود.					
11	من در جمع نظرات نامناسبی ارائه میدهم که بعداً متوجه می‌شوم که بهتر بود ناگفته باقی می‌ماند.					
12	خیلی وقت‌ها به پاد کارهایی که قبلاً انجام داده‌ام می‌افتم، از نسنجیده بودن آنها تعجب می‌کنم.					
13	پاداش سریع کم را بر پاداش زیاد بیتر ترجیح می‌دهم.					
14	سرعت انجام کارها از دقت آنها برایم مهمتر است.					
15	در تصمیمگیری حوصله سبک و سنتگین کردن شرایط را ندارم و دم دست ترین گزینه را انتخاب می‌کنم.					
16	انتظار کشیدن برایم سخت است. مثلاً یک دقیقه پشت چراغ قرمز ایستادن برایم خیلی طولانی به نظر می‌آید.					
17	در حین انجام کار نمی‌توانم بین ابعاد مهم و غیرمهم کار تفاوت قائل شوم و هر کاری دم دستم بود انجام می‌دهم.					
18	برای دستیابی به اهداف بلند مدت خود، نمی‌توانم اهداف کوتاه مدت و نقشه رسمی‌دان به آنها را ترسیم کنم.					
19	من برنامه ریزی طولانی مدتی برای آینده خود ندارم.					
20	برنامه ریزی کارهای روزانه برایم دشوار است.					
21	من نمی‌توانم مدت زیادی به حرف‌های افرادی که شمرده و گند حرف می‌زنند، گوش کنم.					
22	اگر بخواهم شیر اجاق گاز را کنم، معمولاً آن را خاموش می‌کنم.					
23	گوش دادن به یک سخنرانی تلویزیونی به طور کامل، برایم خسته کننده است.					
24	درصورتی که یک فرد در یک جلسه اجتماعی معدن باشد، من کاری می‌کنم که فرد حس راحت تری پیدا کند.					
25	به اینکه دیگران به حرفاها گوش کنند، توجه می‌کنم.					
26	می‌توانم منظور افراد را با نگاه کردن به آنها متوجه شوم.					
27	من فراموش می‌کنم وسایل را کجا گذاشتم و دائم دنبال وسایل می‌گردم.					
28	خیلی وقت‌ها تصمیمی می‌گیرم که عواقب آن را در نظر نگرفته و بعداً پیشیمان می‌شوم.					
29	بیش از ده دقیقه نمی‌توانم روی یک موضوع (مثلاً مطالعه) تمرکز کنم.					
30	نمی‌توانم در حین گوش دادن به یک سخنرانی از آن پادداشت بردارم.					

Table S2. English translated version of cognitive disability questionnaire

Row	Questions	Almost never	Rarely	Sometimes	Mostly	Almost always
1	It is difficult to remember the things that I intend to do.					
2	It is difficult to remember the events which happened to me last week.					
3	I forget the names of the people whom I deal with every day.					
4	It is difficult to recognize people whom I have met before.					
5	I forget why I left the house.					
6	In the conversation, I forget the topic and always quibble.					
7	It is difficult for me to do two things at the same time and it distracts me.					
8	Changing the habit makes me feel uncomfortable and confused.					
9	Learning new skills is difficult for me.					
10	I lose my concentration at the quiet sound.					
11	I often give unsuitable comments in the group that I later realize I should not have said.					
12	Many times, I remember the things that I have done before, but I am often surprised by their thoughtlessness.					
13	I prefer a quick and small reward over a delayed but larger reward.					
14	The speed of completing tasks is more important than their accuracy.					
15	When making decisions, I don't have the patience to ponder the situation. Instead, I opt for the most convenient and available choice.					
16	It is hard for me to wait. For example, standing at a red light for a minute seems too long to me.					
17	While doing work, I can't differentiate between important and unimportant aspects of work and I do whatever I can.					
18	I can't set short-term goals and map out how to achieve them in order to reach my long-term goals.					
19	I have no long-term plans for my future.					
20	It is difficult for me to plan my daily activities.					
21	I can't listen for a long time to people who articulate and speak slowly.					
22	If I want to decrease the heat on the stove, I usually turn it off.					
23	Listening to an entire televised lecture is boring for me.					
24	If a person is uncomfortable in a social meeting, I do something to make the person feel more comfortable.					
25	I pay attention to others listening to my speaking.					
26	I can understand what people mean by looking at them.					
27	I forget where I put my things and I am looking for them.					
28	I often make a decision without considering its outcome and I regret later.					
29	I can't concentrate on a subject (for example, study) for more than ten minutes.					
30	I can't take notes while listening to a lecture.					

Table S3. English translated version of the brief questionnaire to assess participants' adherence to experimental rules

This questionnaire is about your behavior in the last 24 h. Please answer the following questions carefully.

Row	Questions	Answers
1	What time did you go to bed at?	
2	How many minutes did it take you from the time you lay in bed to the time you fell asleep?	
3	Did you sleep continuously during sleep or did you wake up to do something (If you wake up, how many times and for how long)?	
4	Did you take a nap or sleep in the last 24 h (if yes, how many times, at what time and for how long)?	
5	What time did you wake up?	
6	Have you consumed caffeinated beverages (tea or coffee) in the last 24 h? (If the answer is positive, how many times and to what extent)?	
7	Have you consumed alcoholic beverages in the last 24 h? (If the answer is positive, how many times and to what extent)?	
8	Did you do vigorous sports in the last 24 h or not? (If the answer is positive, how many times and to what extent)?	

## Supplementary results

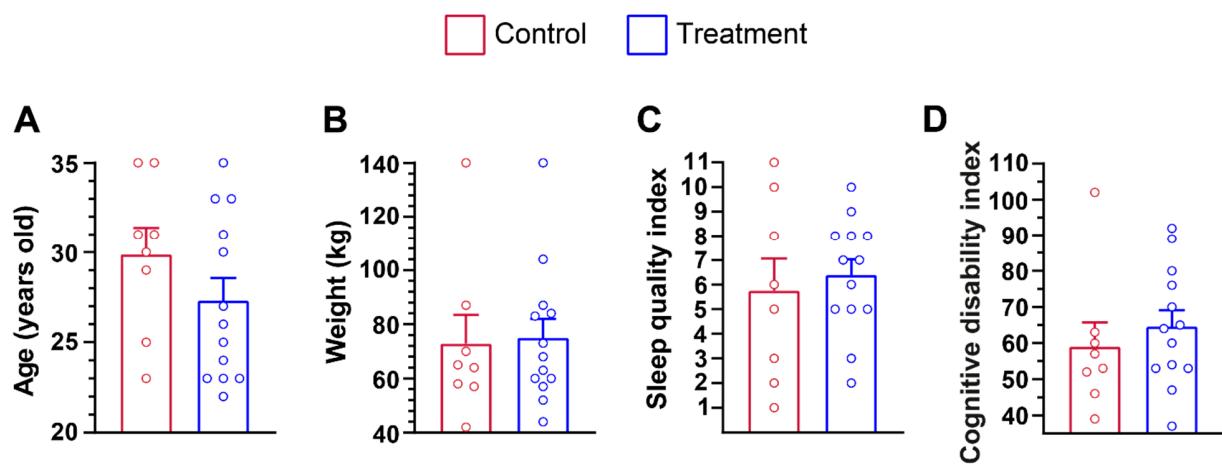


Figure S1. Comparison of age (A), weight (B), sleep quality index (C) and cognitive disability index (D) of subjects among control and treatment groups. Unpaired t-test in A and C and Mann-Whitney U test in B and D; mean $\pm$ SEM.

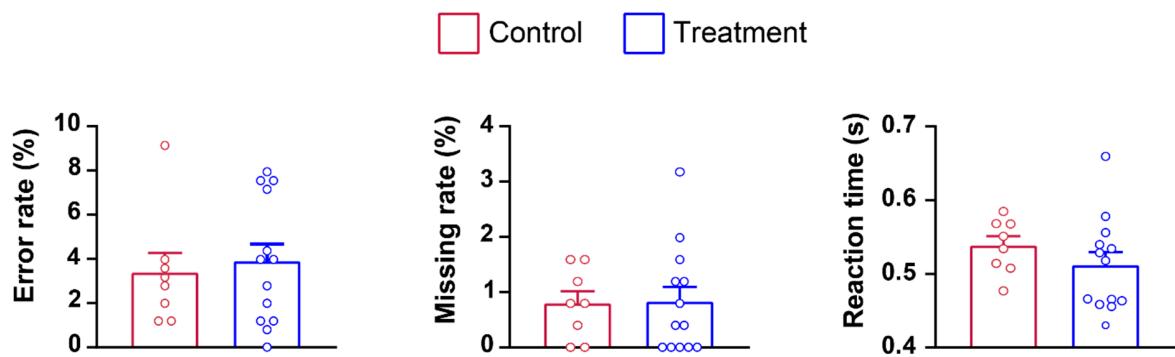


Figure S2. Comparison of NST parameters among control and treatment group subjects on day 1 (before sleep deprivation). Unpaired t-test; mean $\pm$ SEM.

Table S4. Quantitative data of NST in subjects from the control and treatment groups. Mean $\pm$ SEM.

<b>Experimental Group</b>	<b>State</b>	<b>Error rate</b>	<b>Missing rate</b>	<b>Reaction time</b>
Control (n=8)	No SD	3.37301 $\pm$ 0.8999	0.79365 $\pm$ 0.22498	0.53801 $\pm$ 0.01295
	SD+Routine respiration	5.655 $\pm$ 1.229	0.397 $\pm$ 0.07499	0.501 $\pm$ 0.01563
	SD+Oral respiration	6.349 $\pm$ 1.152	1.687 $\pm$ 0.6527	0.501 $\pm$ 0.01816
Treatment (n=13)	No SD	3.87668 $\pm$ 0.79257	0.82418 $\pm$ 0.27131	0.51168 $\pm$ 0.01772
	SD+Air-puff	3.63248 $\pm$ 0.93264	2.04518 $\pm$ 1.23120	0.49954 $\pm$ 0.01738
	SD+nasal respiration	4.63980 $\pm$ 0.90466	1.34310 $\pm$ 0.51922	0.49923 $\pm$ 0.01534

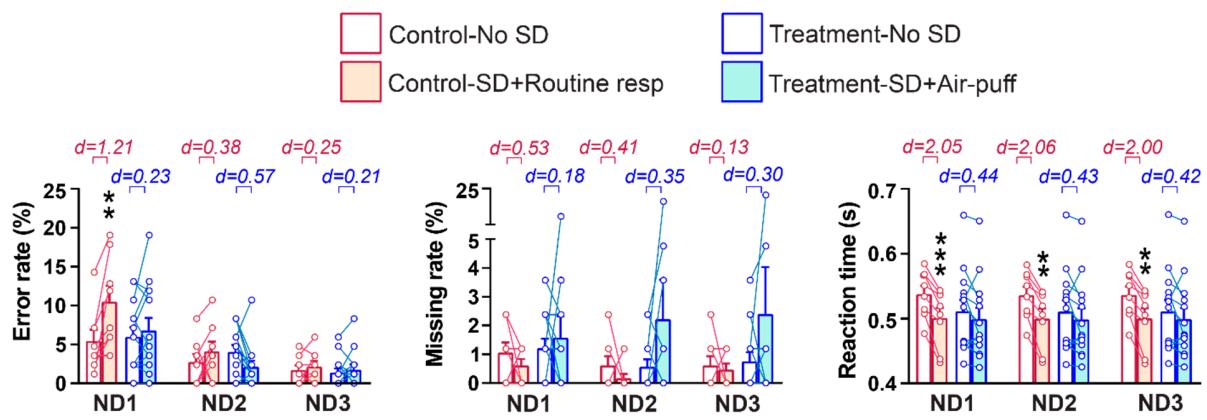


Figure S3. Comparing the effect of applying nasal air-puffs on NST parameters at different numerical distances between control and treatment the groups following one night of PSD. \*\* p<0.01 and \*\*\* p<0.001; two-way repeated measures ANOVA; d shows Cohen's d number; mean $\pm$ SEM.

Table S5. Quantitative data of various numerical distances in NST for subjects in the control and treatment groups. Mean $\pm$ SEM.

Experimental Group	State	Error rate			Missing rate			Reaction time		
		ND1	ND2	ND3	ND1	ND2	ND3	ND1	ND2	ND3
Control (n=8)	No SD	5.50595 $\pm$ 1.4569	2.82738 $\pm$ 1.0294	1.78571 $\pm$ 0.5952	1.04167 $\pm$ 0.3512	0.59524 $\pm$ 0.3181	0.59524 $\pm$ 0.3181	0.53801 $\pm$ 0.0129	0.53637 $\pm$ 0.0131	0.53681 $\pm$ 0.0130
	SD <sup>+</sup> Routine respiration	10.56548 $\pm$ 2.0550	4.16667 $\pm$ 1.2727	2.23214 $\pm$ 0.7268	0.59524 $\pm$ 0.2250	0.14881 $\pm$ 0.1488	0.44643 $\pm$ 0.2178	0.50112 $\pm$ 0.0156	0.50045 $\pm$ 0.0154	0.50059 $\pm$ 0.0158
Treatment (n=13)	No SD	6.04396 $\pm$ 1.2314	4.12088 $\pm$ 0.8902	1.46520 $\pm$ 0.5417	1.19048 $\pm$ 0.3302	0.54945 $\pm$ 0.2563	0.73260 $\pm$ 0.3172	0.51168 $\pm$ 0.0177	0.51116 $\pm$ 0.0177	0.51136 $\pm$ 0.0178
	SD <sup>+</sup> Air-puff	6.86813 $\pm$ 1.6240	2.19780 $\pm$ 0.7842	1.83150 $\pm$ 0.6688	1.55678 $\pm$ 0.7430	2.19780 $\pm$ 1.3736	2.38095 $\pm$ 1.6287	0.49954 $\pm$ 0.0174	0.49894 $\pm$ 0.0174	0.49939 $\pm$ 0.0173

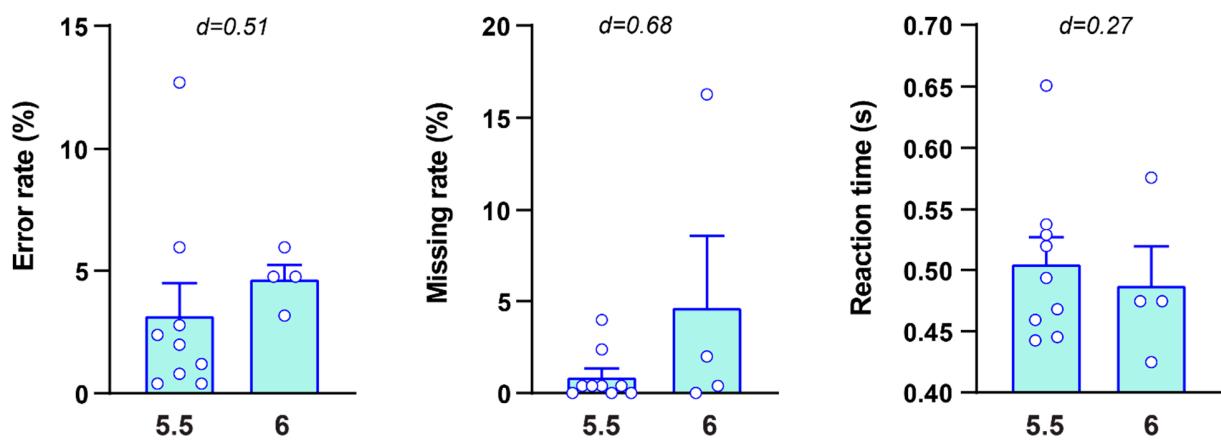


Figure S4. Comparing the effect of nasal air-puffs flow rates (5.5 and 6 L/min) on subjects' performance in the NST following one night of PSD. Unpaired t-test; mean $\pm$ SEM.

Table S6. Quantitative data of the NST for the treatment group according to different flow rates of intranasal air-puff application (5.5 and 6 L/min). Mean $\pm$ SEM.

Parameter	5 (L/min)	6 (L/min)
Error rate	$3.175 \pm 1.321$	$4.663 \pm 0.5699$
Missing rate	$0.889 \pm 0.4572$	$4.663 \pm 3.893$
Reaction time	$0.505 \pm 0.02178$	$0.487 \pm 0.03178$

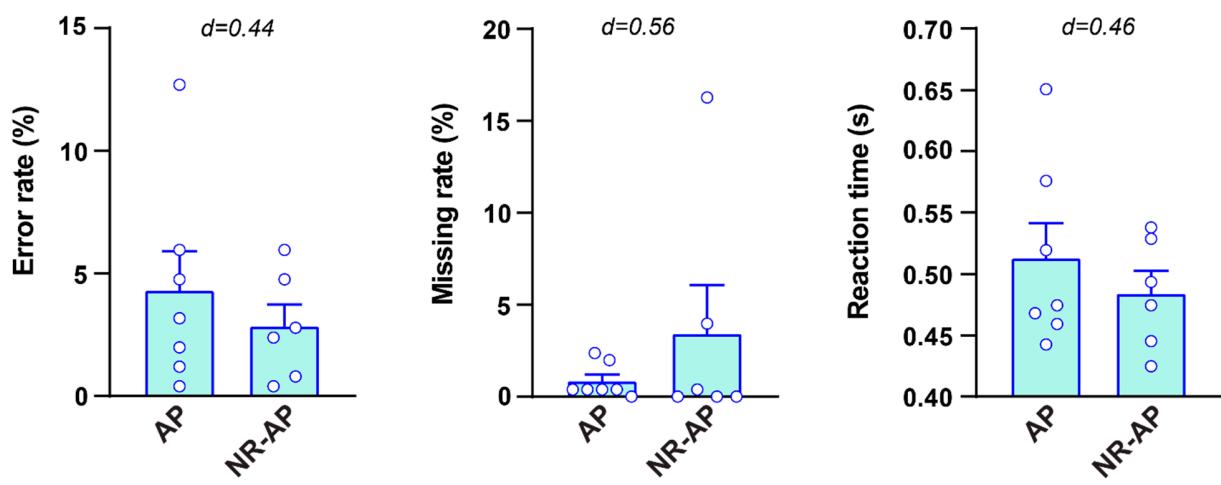


Figure S5. The effect of transposing the timing of nasal air-puffs administration on the performance of subjects in NST following one night of PSD. “AP” denotes data from subgroup 1, in which nasal air-puffs were applied around 23 min before nasal respiration, and “NR-AP” presents data from subgroup 2, where air-puffs applied around 20 min after the cessation of nasal respiration. paired t-test; mean $\pm$ SEM.

Table S7. Quantitative data of NST conducted following intranasal air-puff application in subgroups 1 and 2 of the treatment group. Mean $\pm$ SEM.

<b>Experimental Group</b>	<b>State</b>	<b>Error rate</b>	<b>Missing rate</b>	<b>Reaction time</b>
Treatment (n=13)	AP	4.308 $\pm$ 1.581	0.850 $\pm$ 0.3510	0.513 $\pm$ 0.02859
	NR-AP	2.844 $\pm$ 0.8898	3.439 $\pm$ 2.644	0.484 $\pm$ 0.01837

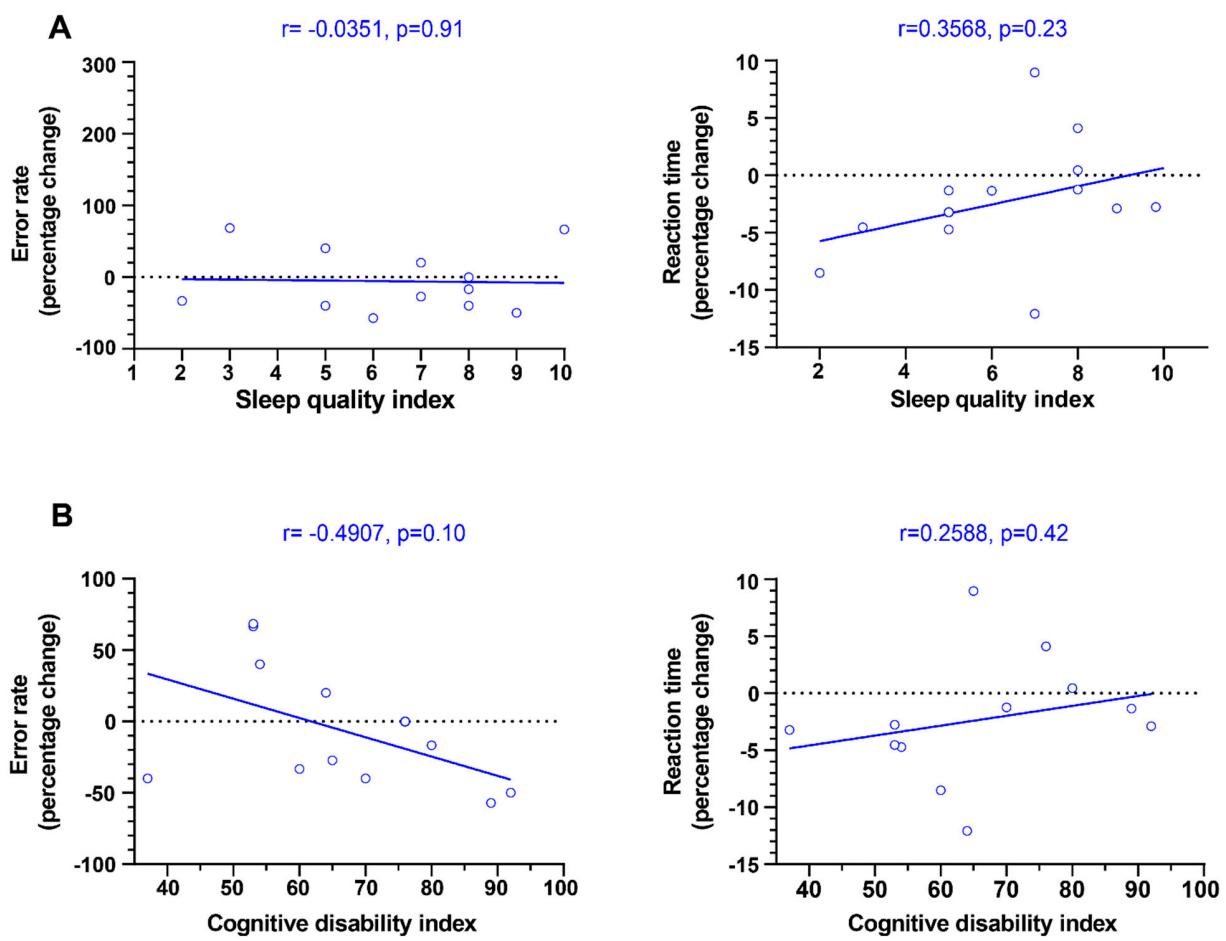


Figure S6. Correlation between the effectiveness of nasal air-puffing in improving the performance of subjects in NST following PSD and their pre-existing sleep quality (A) and cognitive disability (B) indices. Pearson correlation; mean $\pm$ SEM.

Table S8. Quantitative data of EEG delta power for different electrodes in states of treatment group subjects. Mean $\pm$ SEM.

<b>Electrodes</b>	<b>No SD</b>	<b>SD</b>	<b>SD+Air-puff</b>	<b>SD+Nasal resp</b>
<b>Fp1</b>	2.27366 $\pm$ 0.37348	3.26204 $\pm$ 0.63104	1.65448 $\pm$ 0.28945	2.55536 $\pm$ 0.52649
<b>Fpz</b>	1.27453 $\pm$ 0.23389	1.72391 $\pm$ 0.52128	1.09597 $\pm$ 0.1386	2.28767 $\pm$ 0.87106
<b>AFz</b>	2.42117 $\pm$ 0.46188	2.54954 $\pm$ 0.2678	1.64885 $\pm$ 0.19032	2.69822 $\pm$ 0.28357
<b>Fp2</b>	1.05341 $\pm$ 0.134	1.20233 $\pm$ 0.16675	1.02033 $\pm$ 0.13285	1.338 $\pm$ 0.25595
<b>F7</b>	0.99179 $\pm$ 0.15321	1.39273 $\pm$ 0.24954	0.98928 $\pm$ 0.12705	1.17308 $\pm$ 0.15241
<b>F3</b>	2.00565 $\pm$ 0.36169	2.37648 $\pm$ 0.30664	1.58411 $\pm$ 0.18427	1.94708 $\pm$ 0.27903
<b>Fz</b>	1.39835 $\pm$ 0.25122	1.45354 $\pm$ 0.21271	1.21563 $\pm$ 0.18535	1.22739 $\pm$ 0.15517
<b>F4</b>	2.02294 $\pm$ 0.32804	3.34573 $\pm$ 0.76611	1.97146 $\pm$ 0.37103	3.11721 $\pm$ 1.15686
<b>F8</b>	2.2486 $\pm$ 0.33008	2.48472 $\pm$ 0.30041	1.69849 $\pm$ 0.25264	2.61695 $\pm$ 0.46471
<b>FC5</b>	1.45529 $\pm$ 0.55798	1.07835 $\pm$ 0.10503	0.88503 $\pm$ 0.08618	1.01202 $\pm$ 0.1284
<b>FC1</b>	1.95698 $\pm$ 0.41424	1.87642 $\pm$ 0.25905	1.53357 $\pm$ 0.25677	1.87758 $\pm$ 0.34203
<b>FC2</b>	1.14254 $\pm$ 0.19694	1.18496 $\pm$ 0.17317	1.00707 $\pm$ 0.16557	1.09767 $\pm$ 0.16372
<b>FC6</b>	0.9115 $\pm$ 0.16164	1.13274 $\pm$ 0.22449	0.96813 $\pm$ 0.17185	0.99462 $\pm$ 0.16647
<b>C3</b>	1.0167 $\pm$ 0.21968	1.30271 $\pm$ 0.38842	0.91776 $\pm$ 0.18992	1.194 $\pm$ 0.27775
<b>Cz</b>	0.99162 $\pm$ 0.13804	1.06586 $\pm$ 0.14806	0.85404 $\pm$ 0.13868	0.98669 $\pm$ 0.13603
<b>C4</b>	1.22436 $\pm$ 0.24505	1.38345 $\pm$ 0.2926	1.09977 $\pm$ 0.16929	1.34522 $\pm$ 0.29097
<b>CP5</b>	1.24166 $\pm$ 0.19844	1.28608 $\pm$ 0.16263	1.0832 $\pm$ 0.15401	1.22756 $\pm$ 0.15491
<b>CP1</b>	1.20462 $\pm$ 0.1949	1.26079 $\pm$ 0.24018	0.95857 $\pm$ 0.13333	1.19514 $\pm$ 0.18044
<b>CPz</b>	0.98018 $\pm$ 0.2371	0.98607 $\pm$ 0.26388	0.5964 $\pm$ 0.09025	0.80626 $\pm$ 0.12695
<b>CP2</b>	0.9814 $\pm$ 0.13722	1.01334 $\pm$ 0.16431	0.8006 $\pm$ 0.12161	1.00163 $\pm$ 0.12541
<b>CP6</b>	1.01543 $\pm$ 0.20922	1.32529 $\pm$ 0.35972	0.97553 $\pm$ 0.16818	1.23374 $\pm$ 0.28742
<b>P7</b>	1.38199 $\pm$ 0.32303	1.09785 $\pm$ 0.1967	0.94096 $\pm$ 0.19312	1.17016 $\pm$ 0.20786
<b>P3</b>	1.86914 $\pm$ 0.25618	2.12537 $\pm$ 0.40281	1.81974 $\pm$ 0.21334	1.93582 $\pm$ 0.22317
<b>Pz</b>	1.47263 $\pm$ 0.20835	1.36022 $\pm$ 0.16321	1.08704 $\pm$ 0.14731	1.38522 $\pm$ 0.17937
<b>P4</b>	1.64816 $\pm$ 0.36758	1.43786 $\pm$ 0.23168	1.18151 $\pm$ 0.18727	1.66324 $\pm$ 0.20936
<b>P8</b>	2.04701 $\pm$ 0.22499	2.25137 $\pm$ 0.4764	1.91737 $\pm$ 0.41174	2.37559 $\pm$ 0.37903
<b>O1</b>	2.20196 $\pm$ 0.27073	2.12383 $\pm$ 0.25595	1.77622 $\pm$ 0.2607	2.09723 $\pm$ 0.27541
<b>POz</b>	1.64092 $\pm$ 0.25699	1.71422 $\pm$ 0.27446	1.42983 $\pm$ 0.24457	1.59857 $\pm$ 0.26205
<b>O2</b>	2.25835 $\pm$ 0.29276	2.14404 $\pm$ 0.24244	1.73102 $\pm$ 0.22333	2.07052 $\pm$ 0.23556
<b>T7</b>	1.58244 $\pm$ 0.24555	1.69348 $\pm$ 0.27692	1.22375 $\pm$ 0.18146	1.57577 $\pm$ 0.17659
<b>T8</b>	2.09371 $\pm$ 0.55265	1.76548 $\pm$ 0.36853	1.35805 $\pm$ 0.27748	1.58168 $\pm$ 0.35264

Table S9. Quantitative data of EEG theta power for different electrodes in states of treatment group subjects. Mean $\pm$ SEM.

<b>Electrodes</b>	<b>No SD</b>	<b>SD</b>	<b>SD+Air-puff</b>	<b>SD+Nasal resp</b>
<b>Fp1</b>	0.6173 $\pm$ 0.1045	0.73657 $\pm$ 0.10209	0.55997 $\pm$ 0.0878	0.70046 $\pm$ 0.13159
<b>Fpz</b>	0.50147 $\pm$ 0.06509	0.5592 $\pm$ 0.06796	0.49652 $\pm$ 0.06726	0.58843 $\pm$ 0.06906
<b>AFz</b>	0.82266 $\pm$ 0.14243	0.88707 $\pm$ 0.13025	0.65121 $\pm$ 0.08329	0.92677 $\pm$ 0.11469
<b>Fp2</b>	0.75531 $\pm$ 0.16995	0.81592 $\pm$ 0.17551	0.71904 $\pm$ 0.16274	0.81536 $\pm$ 0.15028
<b>F7</b>	0.40464 $\pm$ 0.04581	0.46315 $\pm$ 0.07141	0.37641 $\pm$ 0.05568	0.45604 $\pm$ 0.06867
<b>F3</b>	0.61049 $\pm$ 0.09531	0.79651 $\pm$ 0.10477	0.62022 $\pm$ 0.08994	0.76718 $\pm$ 0.14741
<b>Fz</b>	0.70718 $\pm$ 0.11345	0.79003 $\pm$ 0.10293	0.65093 $\pm$ 0.09589	0.84933 $\pm$ 0.12822
<b>F4</b>	0.74185 $\pm$ 0.08696	0.98729 $\pm$ 0.13618	0.84001 $\pm$ 0.12536	1.02839 $\pm$ 0.14617
<b>F8</b>	0.63064 $\pm$ 0.10286	0.77735 $\pm$ 0.09824	0.58676 $\pm$ 0.08524	0.80602 $\pm$ 0.13606
<b>FC5</b>	0.44697 $\pm$ 0.0511	0.49104 $\pm$ 0.05218	0.44339 $\pm$ 0.04928	0.5305 $\pm$ 0.06365
<b>FC1</b>	0.64916 $\pm$ 0.08139	0.70111 $\pm$ 0.07037	0.65648 $\pm$ 0.07326	0.74337 $\pm$ 0.09102
<b>FC2</b>	0.65641 $\pm$ 0.17648	0.68318 $\pm$ 0.14983	0.66288 $\pm$ 0.15979	0.6621 $\pm$ 0.14924
<b>FC6</b>	0.45504 $\pm$ 0.0866	0.52311 $\pm$ 0.08747	0.47016 $\pm$ 0.08259	0.52899 $\pm$ 0.10111
<b>C3</b>	0.39268 $\pm$ 0.10806	0.40583 $\pm$ 0.13104	0.37119 $\pm$ 0.10719	0.39397 $\pm$ 0.11432
<b>Cz</b>	0.42171 $\pm$ 0.09321	0.4697 $\pm$ 0.09234	0.40391 $\pm$ 0.08198	0.4427 $\pm$ 0.08633
<b>C4</b>	0.5753 $\pm$ 0.09498	0.66676 $\pm$ 0.11306	0.6181 $\pm$ 0.1197	0.71215 $\pm$ 0.12046
<b>CP5</b>	0.61187 $\pm$ 0.14229	0.68756 $\pm$ 0.12591	0.60894 $\pm$ 0.11245	0.63832 $\pm$ 0.11431
<b>CP1</b>	0.52356 $\pm$ 0.08998	0.55998 $\pm$ 0.07964	0.49063 $\pm$ 0.07653	0.53305 $\pm$ 0.07615
<b>CPz</b>	0.29546 $\pm$ 0.036	0.35876 $\pm$ 0.05583	0.30906 $\pm$ 0.04866	0.33848 $\pm$ 0.05473
<b>CP2</b>	0.45743 $\pm$ 0.11953	0.50704 $\pm$ 0.09608	0.45052 $\pm$ 0.10071	0.49928 $\pm$ 0.09066
<b>CP6</b>	0.49248 $\pm$ 0.09574	0.61311 $\pm$ 0.11291	0.53106 $\pm$ 0.10848	0.62627 $\pm$ 0.12724
<b>P7</b>	0.55813 $\pm$ 0.0824	0.63095 $\pm$ 0.08536	0.56844 $\pm$ 0.0999	0.66651 $\pm$ 0.1013
<b>P3</b>	0.7662 $\pm$ 0.08364	0.87356 $\pm$ 0.14256	0.79227 $\pm$ 0.10371	0.92468 $\pm$ 0.14293
<b>Pz</b>	0.54602 $\pm$ 0.0867	0.58854 $\pm$ 0.07452	0.51089 $\pm$ 0.07488	0.57985 $\pm$ 0.07841
<b>P4</b>	0.57564 $\pm$ 0.09844	0.69819 $\pm$ 0.12557	0.57533 $\pm$ 0.10264	0.72475 $\pm$ 0.14206
<b>P8</b>	0.70821 $\pm$ 0.08583	0.87793 $\pm$ 0.09229	0.80131 $\pm$ 0.10132	0.91664 $\pm$ 0.13573
<b>O1</b>	0.79879 $\pm$ 0.10657	0.90383 $\pm$ 0.11378	0.7741 $\pm$ 0.10615	0.87963 $\pm$ 0.1095
<b>POz</b>	0.68017 $\pm$ 0.09085	0.76648 $\pm$ 0.10336	0.65293 $\pm$ 0.10441	0.82209 $\pm$ 0.11795
<b>O2</b>	0.90023 $\pm$ 0.12205	1.02733 $\pm$ 0.12862	0.8947 $\pm$ 0.13277	1.00225 $\pm$ 0.13243
<b>T7</b>	0.64062 $\pm$ 0.06218	0.74554 $\pm$ 0.13269	0.57747 $\pm$ 0.09017	0.75739 $\pm$ 0.11833
<b>T8</b>	0.63112 $\pm$ 0.13014	0.73265 $\pm$ 0.1162	0.63016 $\pm$ 0.11062	0.65253 $\pm$ 0.11531

Table S10. Quantitative data of EEG alpha power for different electrodes in states of treatment group subjects. Mean $\pm$ SEM.

<b>Electrodes</b>	<b>No SD</b>	<b>SD</b>	<b>SD+Air-puff</b>	<b>SD+Nasal resp</b>
<b>Fp1</b>	0.42562 $\pm$ 0.09959	0.82912 $\pm$ 0.30454	0.71177 $\pm$ 0.27877	0.67365 $\pm$ 0.19616
<b>Fpz</b>	0.36629 $\pm$ 0.08746	0.52437 $\pm$ 0.19089	0.37195 $\pm$ 0.08012	0.36467 $\pm$ 0.0663
<b>AFz</b>	0.88313 $\pm$ 0.36461	0.97964 $\pm$ 0.37214	0.90893 $\pm$ 0.42004	1.01426 $\pm$ 0.43048
<b>Fp2</b>	0.404 $\pm$ 0.11343	0.56787 $\pm$ 0.1954	0.41307 $\pm$ 0.10147	0.48777 $\pm$ 0.12024
<b>F7</b>	0.64013 $\pm$ 0.2148	0.76379 $\pm$ 0.26305	0.79233 $\pm$ 0.2991	0.83746 $\pm$ 0.31578
<b>F3</b>	0.42989 $\pm$ 0.11122	0.86524 $\pm$ 0.31245	0.55724 $\pm$ 0.15314	0.86913 $\pm$ 0.3621
<b>Fz</b>	0.4066 $\pm$ 0.0987	0.67368 $\pm$ 0.28149	0.41375 $\pm$ 0.09134	0.59724 $\pm$ 0.20176
<b>F4</b>	0.45856 $\pm$ 0.12894	0.68681 $\pm$ 0.25846	0.45903 $\pm$ 0.11183	0.55466 $\pm$ 0.13767
<b>F8</b>	0.41212 $\pm$ 0.08769	0.7602 $\pm$ 0.33644	0.43698 $\pm$ 0.08651	0.57429 $\pm$ 0.14321
<b>FC5</b>	0.34878 $\pm$ 0.08433	0.46843 $\pm$ 0.1322	0.37422 $\pm$ 0.08539	0.44397 $\pm$ 0.09487
<b>FC1</b>	0.44831 $\pm$ 0.10488	0.52063 $\pm$ 0.11628	0.46278 $\pm$ 0.09402	0.4693 $\pm$ 0.11227
<b>FC2</b>	0.47871 $\pm$ 0.15621	0.60542 $\pm$ 0.18953	0.49563 $\pm$ 0.13433	0.57374 $\pm$ 0.16457
<b>FC6</b>	0.56301 $\pm$ 0.24716	0.58448 $\pm$ 0.2479	0.60982 $\pm$ 0.28927	0.68948 $\pm$ 0.31689
<b>C3</b>	0.59524 $\pm$ 0.20456	0.72863 $\pm$ 0.27777	0.75593 $\pm$ 0.30392	0.78304 $\pm$ 0.28785
<b>Cz</b>	0.3634 $\pm$ 0.14695	0.51915 $\pm$ 0.19833	0.39057 $\pm$ 0.12834	0.44338 $\pm$ 0.15669
<b>C4</b>	1.00661 $\pm$ 0.3712	1.26025 $\pm$ 0.51502	1.28986 $\pm$ 0.59443	1.48138 $\pm$ 0.66726
<b>CP5</b>	0.58204 $\pm$ 0.22661	0.62462 $\pm$ 0.22019	0.59017 $\pm$ 0.23694	0.62357 $\pm$ 0.22075
<b>CP1</b>	0.72901 $\pm$ 0.35835	0.92987 $\pm$ 0.39151	0.81956 $\pm$ 0.42537	0.90569 $\pm$ 0.44748
<b>CPz</b>	0.5822 $\pm$ 0.28579	0.66432 $\pm$ 0.32024	0.62488 $\pm$ 0.2699	0.67796 $\pm$ 0.35077
<b>CP2</b>	0.70591 $\pm$ 0.32011	0.89562 $\pm$ 0.36061	0.86687 $\pm$ 0.42207	1.03574 $\pm$ 0.52314
<b>CP6</b>	0.60041 $\pm$ 0.18244	0.72237 $\pm$ 0.21744	0.65842 $\pm$ 0.19028	0.74521 $\pm$ 0.23973
<b>P7</b>	0.84725 $\pm$ 0.27919	1.47442 $\pm$ 0.59933	1.35857 $\pm$ 0.72574	1.75562 $\pm$ 1.01445
<b>P3</b>	1.62756 $\pm$ 0.47319	1.7012 $\pm$ 0.5017	1.56241 $\pm$ 0.50741	1.85471 $\pm$ 0.68754
<b>Pz</b>	0.37338 $\pm$ 0.05192	0.74763 $\pm$ 0.39774	0.48236 $\pm$ 0.10666	0.51581 $\pm$ 0.18259
<b>P4</b>	1.56144 $\pm$ 0.64755	1.88966 $\pm$ 1.04329	3.30764 $\pm$ 1.45695	3.37707 $\pm$ 1.81117
<b>P8</b>	1.05029 $\pm$ 0.34714	1.19329 $\pm$ 0.35898	1.06369 $\pm$ 0.33879	1.42159 $\pm$ 0.57122
<b>O1</b>	1.11198 $\pm$ 0.18211	1.46165 $\pm$ 0.38148	1.22368 $\pm$ 0.37386	1.39319 $\pm$ 0.55875
<b>POz</b>	0.78139 $\pm$ 0.16578	1.09888 $\pm$ 0.37366	0.76842 $\pm$ 0.12775	0.84645 $\pm$ 0.19583
<b>O2</b>	1.20422 $\pm$ 0.23357	1.25519 $\pm$ 0.24487	1.0306 $\pm$ 0.15174	0.98001 $\pm$ 0.14191
<b>T7</b>	1.09318 $\pm$ 0.39192	1.10296 $\pm$ 0.43315	1.0247 $\pm$ 0.39862	1.14202 $\pm$ 0.44854
<b>T8</b>	0.80187 $\pm$ 0.31946	1.1948 $\pm$ 0.50683	1.5545 $\pm$ 0.67549	1.43339 $\pm$ 0.57238

Table S11. Quantitative data of EEG beta power for different electrodes in states of treatment group subjects. Mean $\pm$ SEM.

<b>Electrodes</b>	<b>No SD</b>	<b>SD</b>	<b>SD+Air-puff</b>	<b>SD+Nasal resp</b>
<b>Fp1</b>	0.14806 $\pm$ 0.02059	0.13992 $\pm$ 0.01765	0.18657 $\pm$ 0.02391	0.15577 $\pm$ 0.02284
<b>Fpz</b>	0.1932 $\pm$ 0.05589	0.17415 $\pm$ 0.03577	0.24467 $\pm$ 0.04927	0.19231 $\pm$ 0.03056
<b>AFz</b>	0.18025 $\pm$ 0.02338	0.14798 $\pm$ 0.01226	0.22781 $\pm$ 0.03032	0.19569 $\pm$ 0.01823
<b>Fp2</b>	0.14669 $\pm$ 0.03755	0.15518 $\pm$ 0.04168	0.16726 $\pm$ 0.04259	0.15618 $\pm$ 0.03842
<b>F7</b>	0.17399 $\pm$ 0.03702	0.13137 $\pm$ 0.02233	0.18314 $\pm$ 0.03435	0.18125 $\pm$ 0.05467
<b>F3</b>	0.23132 $\pm$ 0.048	0.20613 $\pm$ 0.04297	0.23655 $\pm$ 0.04449	0.18751 $\pm$ 0.02687
<b>Fz</b>	0.11888 $\pm$ 0.01504	0.10784 $\pm$ 0.01683	0.12121 $\pm$ 0.01813	0.12476 $\pm$ 0.02406
<b>F4</b>	0.12958 $\pm$ 0.01876	0.14579 $\pm$ 0.02684	0.1528 $\pm$ 0.02658	0.14484 $\pm$ 0.02575
<b>F8</b>	0.21299 $\pm$ 0.0481	0.15753 $\pm$ 0.0255	0.24393 $\pm$ 0.0652	0.15475 $\pm$ 0.02747
<b>FC5</b>	0.1339 $\pm$ 0.01677	0.14757 $\pm$ 0.01941	0.21855 $\pm$ 0.03769	0.15909 $\pm$ 0.0219
<b>FC1</b>	0.20585 $\pm$ 0.03582	0.16171 $\pm$ 0.01792	0.24325 $\pm$ 0.03738	0.19189 $\pm$ 0.03457
<b>FC2</b>	0.15373 $\pm$ 0.04047	0.15118 $\pm$ 0.0361	0.18391 $\pm$ 0.03982	0.14952 $\pm$ 0.03509
<b>FC6</b>	0.15453 $\pm$ 0.02953	0.10514 $\pm$ 0.01299	0.15858 $\pm$ 0.02207	0.13504 $\pm$ 0.03067
<b>C3</b>	0.1362 $\pm$ 0.0204	0.11825 $\pm$ 0.01947	0.17271 $\pm$ 0.02691	0.14885 $\pm$ 0.03201
<b>Cz</b>	0.08431 $\pm$ 0.01242	0.07902 $\pm$ 0.0137	0.09603 $\pm$ 0.01908	0.10006 $\pm$ 0.02209
<b>C4</b>	0.20047 $\pm$ 0.04417	0.16605 $\pm$ 0.03308	0.21882 $\pm$ 0.03369	0.18208 $\pm$ 0.03241
<b>CP5</b>	0.13297 $\pm$ 0.0406	0.13162 $\pm$ 0.03917	0.14564 $\pm$ 0.03876	0.14312 $\pm$ 0.04088
<b>CP1</b>	0.09751 $\pm$ 0.01688	0.09629 $\pm$ 0.01957	0.11781 $\pm$ 0.02565	0.10756 $\pm$ 0.02035
<b>CPz</b>	0.20118 $\pm$ 0.04987	0.1434 $\pm$ 0.02606	0.18453 $\pm$ 0.03795	0.15926 $\pm$ 0.03254
<b>CP2</b>	0.15725 $\pm$ 0.05937	0.14689 $\pm$ 0.04748	0.17528 $\pm$ 0.05158	0.15581 $\pm$ 0.0469
<b>CP6</b>	0.12806 $\pm$ 0.01825	0.11391 $\pm$ 0.0152	0.14194 $\pm$ 0.02089	0.12044 $\pm$ 0.01657
<b>P7</b>	0.19578 $\pm$ 0.0513	0.16745 $\pm$ 0.04344	0.1953 $\pm$ 0.04253	0.17781 $\pm$ 0.041
<b>P3</b>	0.28493 $\pm$ 0.04761	0.2383 $\pm$ 0.04327	0.31361 $\pm$ 0.05653	0.26129 $\pm$ 0.04316
<b>Pz</b>	0.11821 $\pm$ 0.01778	0.11267 $\pm$ 0.023	0.15039 $\pm$ 0.03535	0.12905 $\pm$ 0.0278
<b>P4</b>	0.13981 $\pm$ 0.02003	0.14415 $\pm$ 0.02557	0.20923 $\pm$ 0.04073	0.17494 $\pm$ 0.03339
<b>P8</b>	0.23086 $\pm$ 0.03509	0.19594 $\pm$ 0.03723	0.25113 $\pm$ 0.04323	0.21199 $\pm$ 0.02981
<b>O1</b>	0.30024 $\pm$ 0.03673	0.28216 $\pm$ 0.03716	0.33317 $\pm$ 0.04121	0.29574 $\pm$ 0.04203
<b>POz</b>	0.17087 $\pm$ 0.0279	0.14848 $\pm$ 0.02501	0.16649 $\pm$ 0.0274	0.16823 $\pm$ 0.02651
<b>O2</b>	0.35019 $\pm$ 0.07514	0.33924 $\pm$ 0.06239	0.38021 $\pm$ 0.06524	0.32357 $\pm$ 0.05276
<b>T7</b>	0.32126 $\pm$ 0.06658	0.19222 $\pm$ 0.03085	0.25241 $\pm$ 0.03247	0.24146 $\pm$ 0.03573
<b>T8</b>	0.23923 $\pm$ 0.0619	0.19287 $\pm$ 0.03747	0.22616 $\pm$ 0.03379	0.17781 $\pm$ 0.0275

Table S12. Quantitative data of EEG slow gamma power for different electrodes in states of treatment group subjects. Mean $\pm$ SEM.

<b>Electrodes</b>	<b>No SD</b>	<b>SD</b>	<b>SD+Air-puff</b>	<b>SD+Nasal resp</b>
<b>Fp1</b>	0.0611 $\pm$ 0.03297	0.0443 $\pm$ 0.02017	0.05226 $\pm$ 0.01698	0.03809 $\pm$ 0.01165
<b>Fpz</b>	0.04433 $\pm$ 0.01181	0.02921 $\pm$ 0.00704	0.0478 $\pm$ 0.01148	0.03801 $\pm$ 0.00907
<b>AFz</b>	0.04616 $\pm$ 0.00989	0.03189 $\pm$ 0.00368	0.05834 $\pm$ 0.01353	0.0413 $\pm$ 0.00737
<b>Fp2</b>	0.01606 $\pm$ 0.00167	0.0138 $\pm$ 0.00125	0.01516 $\pm$ 0.00127	0.01378 $\pm$ 0.0011
<b>F7</b>	0.04462 $\pm$ 0.00781	0.02414 $\pm$ 0.00437	0.04352 $\pm$ 0.01002	0.04448 $\pm$ 0.01968
<b>F3</b>	0.05887 $\pm$ 0.01972	0.0434 $\pm$ 0.01691	0.05761 $\pm$ 0.01856	0.03651 $\pm$ 0.01219
<b>Fz</b>	0.02381 $\pm$ 0.00549	0.01438 $\pm$ 0.00115	0.01821 $\pm$ 0.00317	0.01669 $\pm$ 0.00293
<b>F4</b>	0.02174 $\pm$ 0.0039	0.01653 $\pm$ 0.00191	0.01732 $\pm$ 0.00176	0.01567 $\pm$ 0.00147
<b>F8</b>	0.06038 $\pm$ 0.02075	0.03796 $\pm$ 0.01223	0.06396 $\pm$ 0.02364	0.03615 $\pm$ 0.00909
<b>FC5</b>	0.02805 $\pm$ 0.00447	0.02375 $\pm$ 0.00369	0.04879 $\pm$ 0.01422	0.02541 $\pm$ 0.00359
<b>FC1</b>	0.05155 $\pm$ 0.01381	0.03365 $\pm$ 0.00533	0.05785 $\pm$ 0.01315	0.04246 $\pm$ 0.01218
<b>FC2</b>	0.01973 $\pm$ 0.00264	0.01753 $\pm$ 0.00239	0.02566 $\pm$ 0.00522	0.01641 $\pm$ 0.00155
<b>FC6</b>	0.04678 $\pm$ 0.01335	0.01882 $\pm$ 0.00236	0.03962 $\pm$ 0.00885	0.02673 $\pm$ 0.00835
<b>C3</b>	0.03595 $\pm$ 0.00875	0.01957 $\pm$ 0.00349	0.04415 $\pm$ 0.01425	0.0282 $\pm$ 0.01087
<b>Cz</b>	0.01464 $\pm$ 0.00266	0.01218 $\pm$ 0.00199	0.01524 $\pm$ 0.00223	0.01175 $\pm$ 0.00116
<b>C4</b>	0.04777 $\pm$ 0.02112	0.02446 $\pm$ 0.00362	0.04589 $\pm$ 0.00944	0.02587 $\pm$ 0.00407
<b>CP5</b>	0.01569 $\pm$ 0.00272	0.01376 $\pm$ 0.00249	0.0157 $\pm$ 0.00227	0.01419 $\pm$ 0.00228
<b>CP1</b>	0.01388 $\pm$ 0.00177	0.01143 $\pm$ 0.00122	0.01323 $\pm$ 0.0014	0.0112 $\pm$ 0.00074
<b>CPz</b>	0.06545 $\pm$ 0.02283	0.02716 $\pm$ 0.00593	0.04114 $\pm$ 0.01063	0.03082 $\pm$ 0.00885
<b>CP2</b>	0.01482 $\pm$ 0.00307	0.01275 $\pm$ 0.00191	0.01602 $\pm$ 0.00267	0.01163 $\pm$ 0.00089
<b>CP6</b>	0.05116 $\pm$ 0.02008	0.03989 $\pm$ 0.01599	0.05351 $\pm$ 0.01886	0.02627 $\pm$ 0.0068
<b>P7</b>	0.03884 $\pm$ 0.02036	0.02172 $\pm$ 0.00578	0.0321 $\pm$ 0.00942	0.01853 $\pm$ 0.003
<b>P3</b>	0.06916 $\pm$ 0.01501	0.03906 $\pm$ 0.00814	0.0688 $\pm$ 0.01552	0.03733 $\pm$ 0.00472
<b>Pz</b>	0.0165 $\pm$ 0.00202	0.01311 $\pm$ 0.00147	0.01699 $\pm$ 0.00233	0.01383 $\pm$ 0.00162
<b>P4</b>	0.02157 $\pm$ 0.00327	0.01886 $\pm$ 0.0037	0.03888 $\pm$ 0.01594	0.01745 $\pm$ 0.00187
<b>P8</b>	0.03446 $\pm$ 0.00618	0.0263 $\pm$ 0.0038	0.03925 $\pm$ 0.00697	0.02908 $\pm$ 0.00549
<b>O1</b>	0.04505 $\pm$ 0.00741	0.05013 $\pm$ 0.01127	0.07018 $\pm$ 0.01623	0.04231 $\pm$ 0.00931
<b>POz</b>	0.02144 $\pm$ 0.00294	0.01699 $\pm$ 0.00152	0.02149 $\pm$ 0.00233	0.02171 $\pm$ 0.00492
<b>O2</b>	0.05057 $\pm$ 0.0103	0.06196 $\pm$ 0.01513	0.07141 $\pm$ 0.01606	0.0473 $\pm$ 0.01346
<b>T7</b>	0.08374 $\pm$ 0.01908	0.03686 $\pm$ 0.00735	0.06362 $\pm$ 0.01228	0.0503 $\pm$ 0.00937
<b>T8</b>	0.06504 $\pm$ 0.02365	0.03745 $\pm$ 0.00779	0.04954 $\pm$ 0.00956	0.03123 $\pm$ 0.00556

Table S13. Quantitative data of EEG medium gamma power for different electrodes in states of treatment group subjects. Mean $\pm$ SEM.

<b>Electrodes</b>	<b>No SD</b>	<b>SD</b>	<b>SD+Air-puff</b>	<b>SD+Nasal resp</b>
<b>Fp1</b>	0.01805 $\pm$ 0.01063	0.0124 $\pm$ 0.00661	0.01537 $\pm$ 0.00574	0.01062 $\pm$ 0.0041
<b>Fpz</b>	0.0139 $\pm$ 0.00352	0.01007 $\pm$ 0.0027	0.01582 $\pm$ 0.00422	0.01102 $\pm$ 0.00208
<b>AFz</b>	0.01853 $\pm$ 0.00748	0.00914 $\pm$ 0.0012	0.01776 $\pm$ 0.00376	0.01228 $\pm$ 0.00195
<b>Fp2</b>	0.00455 $\pm$ 0.00069	0.00297 $\pm$ 0.00033	0.00384 $\pm$ 0.00054	0.00304 $\pm$ 0.00024
<b>F7</b>	0.01551 $\pm$ 0.0025	0.01015 $\pm$ 0.00343	0.01547 $\pm$ 0.00368	0.01896 $\pm$ 0.00981
<b>F3</b>	0.01442 $\pm$ 0.00548	0.00689 $\pm$ 0.00128	0.01203 $\pm$ 0.00442	0.0095 $\pm$ 0.0032
<b>Fz</b>	0.0088 $\pm$ 0.00268	0.00368 $\pm$ 0.00039	0.00534 $\pm$ 0.0013	0.00451 $\pm$ 0.00098
<b>F4</b>	0.00758 $\pm$ 0.00257	0.00368 $\pm$ 0.00053	0.00421 $\pm$ 0.00059	0.0036 $\pm$ 0.00035
<b>F8</b>	0.0194 $\pm$ 0.00686	0.01075 $\pm$ 0.00381	0.02341 $\pm$ 0.01148	0.00872 $\pm$ 0.00185
<b>FC5</b>	0.00906 $\pm$ 0.00229	0.00804 $\pm$ 0.00206	0.01626 $\pm$ 0.00402	0.0064 $\pm$ 0.00107
<b>FC1</b>	0.01955 $\pm$ 0.00627	0.01094 $\pm$ 0.00199	0.01821 $\pm$ 0.00381	0.0133 $\pm$ 0.0037
<b>FC2</b>	0.0057 $\pm$ 0.00103	0.00442 $\pm$ 0.00091	0.00713 $\pm$ 0.00165	0.00394 $\pm$ 0.00047
<b>FC6</b>	0.01664 $\pm$ 0.0059	0.00756 $\pm$ 0.00226	0.01683 $\pm$ 0.00396	0.00954 $\pm$ 0.00313
<b>C3</b>	0.01317 $\pm$ 0.00429	0.00572 $\pm$ 0.00143	0.0161 $\pm$ 0.00637	0.00922 $\pm$ 0.00448
<b>Cz</b>	0.00426 $\pm$ 0.00126	0.00304 $\pm$ 0.0008	0.00415 $\pm$ 0.00093	0.00287 $\pm$ 0.00039
<b>C4</b>	0.01921 $\pm$ 0.01009	0.00754 $\pm$ 0.00151	0.01626 $\pm$ 0.00386	0.00798 $\pm$ 0.00145
<b>CP5</b>	0.00347 $\pm$ 0.00037	0.00259 $\pm$ 0.00022	0.00337 $\pm$ 0.00042	0.00268 $\pm$ 0.00019
<b>CP1</b>	0.00366 $\pm$ 0.00055	0.00258 $\pm$ 0.00029	0.00333 $\pm$ 0.00045	0.00241 $\pm$ 0.0001
<b>CPz</b>	0.02421 $\pm$ 0.00969	0.00851 $\pm$ 0.00251	0.01578 $\pm$ 0.00532	0.01054 $\pm$ 0.00443
<b>CP2</b>	0.00511 $\pm$ 0.00157	0.00379 $\pm$ 0.00089	0.0051 $\pm$ 0.0014	0.00291 $\pm$ 0.00028
<b>CP6</b>	0.01917 $\pm$ 0.00874	0.00985 $\pm$ 0.00334	0.01534 $\pm$ 0.00577	0.00776 $\pm$ 0.00231
<b>P7</b>	0.00505 $\pm$ 0.00057	0.00416 $\pm$ 0.00049	0.00653 $\pm$ 0.00099	0.00393 $\pm$ 0.00032
<b>P3</b>	0.0253 $\pm$ 0.00534	0.01249 $\pm$ 0.00296	0.02243 $\pm$ 0.00494	0.0116 $\pm$ 0.0011
<b>Pz</b>	0.0042 $\pm$ 0.00062	0.00284 $\pm$ 0.00031	0.00393 $\pm$ 0.00061	0.00282 $\pm$ 0.00039
<b>P4</b>	0.0046 $\pm$ 0.00063	0.00386 $\pm$ 0.00071	0.00577 $\pm$ 0.00097	0.00364 $\pm$ 0.00042
<b>P8</b>	0.01404 $\pm$ 0.00329	0.01086 $\pm$ 0.00319	0.01487 $\pm$ 0.00364	0.00969 $\pm$ 0.00226
<b>O1</b>	0.02103 $\pm$ 0.00542	0.01731 $\pm$ 0.00341	0.02168 $\pm$ 0.00625	0.01255 $\pm$ 0.00242
<b>POz</b>	0.00431 $\pm$ 0.00048	0.00352 $\pm$ 0.00044	0.00476 $\pm$ 0.00069	0.00339 $\pm$ 0.00035
<b>O2</b>	0.01418 $\pm$ 0.00288	0.01886 $\pm$ 0.00498	0.02244 $\pm$ 0.00548	0.01321 $\pm$ 0.00397
<b>T7</b>	0.03198 $\pm$ 0.00957	0.01653 $\pm$ 0.00595	0.02444 $\pm$ 0.0054	0.02152 $\pm$ 0.00524
<b>T8</b>	0.01547 $\pm$ 0.00681	0.01221 $\pm$ 0.00261	0.01618 $\pm$ 0.00324	0.00928 $\pm$ 0.0019

Table S14. Quantitative data of EEG fast gamma power for different electrodes in states of treatment group subjects. Mean $\pm$ SEM.

<b>Electrodes</b>	<b>No SD</b>	<b>SD</b>	<b>SD+Air-puff</b>	<b>SD+Nasal resp</b>
<b>Fp1</b>	0.00829 $\pm$ 0.00467	0.00551 $\pm$ 0.00269	0.00709 $\pm$ 0.00266	0.00484 $\pm$ 0.00167
<b>Fpz</b>	0.00732 $\pm$ 0.00262	0.0037 $\pm$ 0.00092	0.00656 $\pm$ 0.002	0.00433 $\pm$ 0.00087
<b>AFz</b>	0.01234 $\pm$ 0.00717	0.00425 $\pm$ 0.00051	0.00826 $\pm$ 0.0016	0.00572 $\pm$ 0.00087
<b>Fp2</b>	0.00222 $\pm$ 0.00034	0.00143 $\pm$ 0.00017	0.00182 $\pm$ 0.00028	0.00157 $\pm$ 0.00012
<b>F7</b>	0.00814 $\pm$ 0.00142	0.005 $\pm$ 0.00155	0.00766 $\pm$ 0.00182	0.00912 $\pm$ 0.00477
<b>F3</b>	0.00722 $\pm$ 0.00263	0.00332 $\pm$ 0.00055	0.00577 $\pm$ 0.00226	0.00409 $\pm$ 0.00128
<b>Fz</b>	0.00491 $\pm$ 0.00196	0.00179 $\pm$ 0.00018	0.00272 $\pm$ 0.00063	0.00214 $\pm$ 0.00046
<b>F4</b>	0.00494 $\pm$ 0.00237	0.002 $\pm$ 0.0004	0.00219 $\pm$ 0.00037	0.00197 $\pm$ 0.00024
<b>F8</b>	0.00914 $\pm$ 0.00309	0.00516 $\pm$ 0.00179	0.01209 $\pm$ 0.0062	0.00424 $\pm$ 0.00078
<b>FC5</b>	0.00538 $\pm$ 0.00154	0.00378 $\pm$ 0.0009	0.00805 $\pm$ 0.00219	0.00327 $\pm$ 0.00046
<b>FC1</b>	0.0119 $\pm$ 0.00525	0.00515 $\pm$ 0.00089	0.00879 $\pm$ 0.00187	0.00616 $\pm$ 0.00164
<b>FC2</b>	0.00327 $\pm$ 0.00067	0.00229 $\pm$ 0.00044	0.00362 $\pm$ 0.00074	0.00216 $\pm$ 0.00028
<b>FC6</b>	0.00949 $\pm$ 0.0036	0.00384 $\pm$ 0.00109	0.00856 $\pm$ 0.0019	0.00478 $\pm$ 0.00147
<b>C3</b>	0.00795 $\pm$ 0.00301	0.00314 $\pm$ 0.00075	0.0087 $\pm$ 0.00351	0.00488 $\pm$ 0.0023
<b>Cz</b>	0.00233 $\pm$ 0.00081	0.0015 $\pm$ 0.00041	0.00209 $\pm$ 0.00048	0.00144 $\pm$ 0.00019
<b>C4</b>	0.01212 $\pm$ 0.00606	0.00566 $\pm$ 0.00186	0.00964 $\pm$ 0.00207	0.00604 $\pm$ 0.00147
<b>CP5</b>	0.00216 $\pm$ 0.00038	0.00144 $\pm$ 0.00016	0.00201 $\pm$ 0.00036	0.00154 $\pm$ 0.00019
<b>CP1</b>	0.00212 $\pm$ 0.00041	0.00139 $\pm$ 0.0002	0.0018 $\pm$ 0.00026	0.0013 $\pm$ 0.00011
<b>CPz</b>	0.01251 $\pm$ 0.00498	0.0047 $\pm$ 0.00136	0.0085 $\pm$ 0.00291	0.0056 $\pm$ 0.00241
<b>CP2</b>	0.00291 $\pm$ 0.00101	0.00191 $\pm$ 0.00044	0.00277 $\pm$ 0.00078	0.00154 $\pm$ 0.00016
<b>CP6</b>	0.00652 $\pm$ 0.00334	0.0033 $\pm$ 0.00073	0.00659 $\pm$ 0.003	0.0031 $\pm$ 0.0005
<b>P7</b>	0.00274 $\pm$ 0.00033	0.00224 $\pm$ 0.00029	0.00343 $\pm$ 0.00048	0.00218 $\pm$ 0.00015
<b>P3</b>	0.01496 $\pm$ 0.00324	0.00774 $\pm$ 0.00215	0.01233 $\pm$ 0.00276	0.00701 $\pm$ 0.0006
<b>Pz</b>	0.00223 $\pm$ 0.00038	0.00135 $\pm$ 0.00014	0.00189 $\pm$ 0.00033	0.00139 $\pm$ 0.0002
<b>P4</b>	0.00496 $\pm$ 0.00201	0.00457 $\pm$ 0.00205	0.00817 $\pm$ 0.00507	0.00273 $\pm$ 0.00083
<b>P8</b>	0.007 $\pm$ 0.00169	0.00558 $\pm$ 0.00141	0.00758 $\pm$ 0.00156	0.00541 $\pm$ 0.00102
<b>O1</b>	0.00805 $\pm$ 0.00149	0.00807 $\pm$ 0.00155	0.0117 $\pm$ 0.00267	0.00732 $\pm$ 0.00142
<b>POz</b>	0.00305 $\pm$ 0.00086	0.00197 $\pm$ 0.0002	0.00276 $\pm$ 0.00041	0.00259 $\pm$ 0.00083
<b>O2</b>	0.0089 $\pm$ 0.00194	0.00971 $\pm$ 0.00259	0.01154 $\pm$ 0.00271	0.00669 $\pm$ 0.00176
<b>T7</b>	0.01612 $\pm$ 0.00509	0.00705 $\pm$ 0.0019	0.01212 $\pm$ 0.00297	0.01058 $\pm$ 0.00241
<b>T8</b>	0.00751 $\pm$ 0.0035	0.00533 $\pm$ 0.00108	0.00799 $\pm$ 0.00187	0.00465 $\pm$ 0.00089

Table S15. Quantitative analysis of Higuchi's fractal dimension of EEG across various electrodes in states of treatment group subjects. Mean $\pm$ SEM.

<b>Electrodes</b>	<b>No SD</b>	<b>SD</b>	<b>SD+Air-puff</b>	<b>SD+Nasal resp</b>
<b>Fp1</b>	1.47142 $\pm$ 0.03305	1.4301 $\pm$ 0.03014	1.47838 $\pm$ 0.0327	1.45831 $\pm$ 0.03245
<b>Fpz</b>	1.5011 $\pm$ 0.03069	1.45663 $\pm$ 0.03139	1.49445 $\pm$ 0.03227	1.43652 $\pm$ 0.0274
<b>Afz</b>	1.50336 $\pm$ 0.03785	1.43448 $\pm$ 0.03643	1.49026 $\pm$ 0.04406	1.45614 $\pm$ 0.02642
<b>Fp2</b>	1.51153 $\pm$ 0.03463	1.4362 $\pm$ 0.03632	1.4856 $\pm$ 0.0425	1.44917 $\pm$ 0.03199
<b>F7</b>	1.50729 $\pm$ 0.03508	1.45977 $\pm$ 0.02264	1.50351 $\pm$ 0.03268	1.48168 $\pm$ 0.02964
<b>F3</b>	1.49485 $\pm$ 0.03868	1.4404 $\pm$ 0.03204	1.47248 $\pm$ 0.03772	1.46429 $\pm$ 0.02887
<b>Fz</b>	1.46271 $\pm$ 0.03539	1.38685 $\pm$ 0.02261	1.42937 $\pm$ 0.03085	1.41268 $\pm$ 0.02972
<b>F4</b>	1.51418 $\pm$ 0.02877	1.46509 $\pm$ 0.02821	1.51603 $\pm$ 0.03744	1.4694 $\pm$ 0.02621
<b>F8</b>	1.51913 $\pm$ 0.03008	1.4615 $\pm$ 0.02433	1.5057 $\pm$ 0.03049	1.48003 $\pm$ 0.02936
<b>FC5</b>	1.5239 $\pm$ 0.03181	1.44344 $\pm$ 0.02621	1.49779 $\pm$ 0.03939	1.47014 $\pm$ 0.02875
<b>FC1</b>	1.45148 $\pm$ 0.0406	1.39236 $\pm$ 0.02591	1.41866 $\pm$ 0.03382	1.44291 $\pm$ 0.03976
<b>FC2</b>	1.47894 $\pm$ 0.02201	1.43276 $\pm$ 0.02105	1.4889 $\pm$ 0.03287	1.43645 $\pm$ 0.0223
<b>FC6</b>	1.52301 $\pm$ 0.02953	1.45694 $\pm$ 0.02735	1.52087 $\pm$ 0.03947	1.45193 $\pm$ 0.02969
<b>C3</b>	1.56296 $\pm$ 0.03454	1.48441 $\pm$ 0.03352	1.53032 $\pm$ 0.04333	1.49079 $\pm$ 0.03749
<b>Cz</b>	1.42726 $\pm$ 0.02372	1.40644 $\pm$ 0.0302	1.45842 $\pm$ 0.04433	1.43204 $\pm$ 0.02829
<b>C4</b>	1.53373 $\pm$ 0.03737	1.48363 $\pm$ 0.02568	1.53135 $\pm$ 0.03491	1.50151 $\pm$ 0.02521
<b>CP5</b>	1.52806 $\pm$ 0.02783	1.45567 $\pm$ 0.01843	1.50595 $\pm$ 0.03433	1.46293 $\pm$ 0.02285
<b>CP1</b>	1.43617 $\pm$ 0.02479	1.39018 $\pm$ 0.01798	1.43724 $\pm$ 0.02811	1.41518 $\pm$ 0.0197
<b>CPz</b>	1.43135 $\pm$ 0.02449	1.40103 $\pm$ 0.0369	1.43886 $\pm$ 0.03616	1.39447 $\pm$ 0.02778
<b>CP2</b>	1.43823 $\pm$ 0.02643	1.43018 $\pm$ 0.02566	1.46871 $\pm$ 0.03248	1.4049 $\pm$ 0.02566
<b>CP6</b>	1.49987 $\pm$ 0.03231	1.43913 $\pm$ 0.0272	1.47677 $\pm$ 0.03824	1.4151 $\pm$ 0.02688
<b>P7</b>	1.52634 $\pm$ 0.02712	1.44831 $\pm$ 0.02553	1.50823 $\pm$ 0.02414	1.4852 $\pm$ 0.01947
<b>P3</b>	1.44631 $\pm$ 0.03647	1.40561 $\pm$ 0.02557	1.468 $\pm$ 0.03367	1.40951 $\pm$ 0.02743
<b>Pz</b>	1.41813 $\pm$ 0.02558	1.35703 $\pm$ 0.02442	1.38808 $\pm$ 0.02559	1.3667 $\pm$ 0.01779
<b>P4</b>	1.41023 $\pm$ 0.03194	1.37535 $\pm$ 0.02666	1.44128 $\pm$ 0.04268	1.3352 $\pm$ 0.02579
<b>P8</b>	1.46124 $\pm$ 0.0255	1.42966 $\pm$ 0.03891	1.46865 $\pm$ 0.04276	1.40353 $\pm$ 0.0271
<b>O1</b>	1.45884 $\pm$ 0.02745	1.43364 $\pm$ 0.03205	1.48166 $\pm$ 0.03644	1.45174 $\pm$ 0.02614
<b>Poz</b>	1.36628 $\pm$ 0.03121	1.31811 $\pm$ 0.02444	1.35782 $\pm$ 0.02769	1.34153 $\pm$ 0.02443
<b>O2</b>	1.46864 $\pm$ 0.03001	1.45851 $\pm$ 0.03344	1.49936 $\pm$ 0.0297	1.43554 $\pm$ 0.03162
<b>T7</b>	1.55774 $\pm$ 0.0233	1.50202 $\pm$ 0.02451	1.56484 $\pm$ 0.02887	1.54434 $\pm$ 0.02715
<b>T8</b>	1.51861 $\pm$ 0.04054	1.48469 $\pm$ 0.04315	1.51574 $\pm$ 0.04728	1.46637 $\pm$ 0.04219

Table S16. Quantitative analysis of Katz's fractal dimension of EEG across various electrodes in states of treatment group subjects. Mean $\pm$ SEM.

<b>Electrodes</b>	<b>No SD</b>	<b>SD</b>	<b>SD+Air-puff</b>	<b>SD+Nasal resp</b>
<b>Fp1</b>	1.04472 $\pm$ 0.00492	1.04327 $\pm$ 0.00387	1.05426 $\pm$ 0.00504	1.04766 $\pm$ 0.00448
<b>Fpz</b>	1.04946 $\pm$ 0.00787	1.04361 $\pm$ 0.00448	1.05443 $\pm$ 0.00716	1.04889 $\pm$ 0.00643
<b>Afz</b>	1.04402 $\pm$ 0.00449	1.04171 $\pm$ 0.00426	1.05181 $\pm$ 0.00684	1.04311 $\pm$ 0.00541
<b>Fp2</b>	1.06062 $\pm$ 0.00819	1.04833 $\pm$ 0.00554	1.06297 $\pm$ 0.00955	1.04956 $\pm$ 0.00463
<b>F7</b>	1.06263 $\pm$ 0.0103	1.04851 $\pm$ 0.00312	1.06231 $\pm$ 0.00567	1.05915 $\pm$ 0.00445
<b>F3</b>	1.05367 $\pm$ 0.0081	1.04675 $\pm$ 0.00535	1.05746 $\pm$ 0.00685	1.05462 $\pm$ 0.00566
<b>Fz</b>	1.04066 $\pm$ 0.00398	1.03913 $\pm$ 0.00471	1.045 $\pm$ 0.00572	1.04223 $\pm$ 0.00546
<b>F4</b>	1.0457 $\pm$ 0.00482	1.04208 $\pm$ 0.00355	1.05679 $\pm$ 0.0068	1.04465 $\pm$ 0.00348
<b>F8</b>	1.06188 $\pm$ 0.00927	1.0493 $\pm$ 0.00326	1.06442 $\pm$ 0.00608	1.05377 $\pm$ 0.00602
<b>FC5</b>	1.05641 $\pm$ 0.00571	1.0395 $\pm$ 0.00455	1.05242 $\pm$ 0.00672	1.04905 $\pm$ 0.00854
<b>FC1</b>	1.04265 $\pm$ 0.00608	1.03565 $\pm$ 0.00433	1.04037 $\pm$ 0.00477	1.04574 $\pm$ 0.00586
<b>FC2</b>	1.04527 $\pm$ 0.00534	1.04193 $\pm$ 0.00553	1.05191 $\pm$ 0.00525	1.04291 $\pm$ 0.00472
<b>FC6</b>	1.05429 $\pm$ 0.00924	1.03795 $\pm$ 0.00354	1.05391 $\pm$ 0.00578	1.04501 $\pm$ 0.00655
<b>C3</b>	1.05478 $\pm$ 0.00766	1.0374 $\pm$ 0.00385	1.05104 $\pm$ 0.00722	1.04251 $\pm$ 0.00596
<b>Cz</b>	1.0344 $\pm$ 0.00493	1.03387 $\pm$ 0.00394	1.04213 $\pm$ 0.00502	1.03842 $\pm$ 0.00518
<b>C4</b>	1.05412 $\pm$ 0.01084	1.03983 $\pm$ 0.00481	1.05197 $\pm$ 0.00757	1.04591 $\pm$ 0.00723
<b>CP5</b>	1.05582 $\pm$ 0.00991	1.04092 $\pm$ 0.004	1.05304 $\pm$ 0.00603	1.04473 $\pm$ 0.00389
<b>CP1</b>	1.03259 $\pm$ 0.0035	1.03118 $\pm$ 0.00438	1.03673 $\pm$ 0.00472	1.03554 $\pm$ 0.00465
<b>CPz</b>	1.03627 $\pm$ 0.00375	1.03698 $\pm$ 0.00454	1.04367 $\pm$ 0.00473	1.03798 $\pm$ 0.00492
<b>CP2</b>	1.03381 $\pm$ 0.00458	1.03429 $\pm$ 0.00386	1.04052 $\pm$ 0.00414	1.03445 $\pm$ 0.00377
<b>CP6</b>	1.05411 $\pm$ 0.0098	1.04605 $\pm$ 0.00666	1.05512 $\pm$ 0.00754	1.04262 $\pm$ 0.00492
<b>P7</b>	1.07619 $\pm$ 0.00797	1.05733 $\pm$ 0.00573	1.06978 $\pm$ 0.0067	1.0642 $\pm$ 0.00442
<b>P3</b>	1.04669 $\pm$ 0.00946	1.03886 $\pm$ 0.00493	1.0483 $\pm$ 0.00596	1.03871 $\pm$ 0.00349
<b>Pz</b>	1.03788 $\pm$ 0.00353	1.03457 $\pm$ 0.00504	1.0414 $\pm$ 0.00626	1.03774 $\pm$ 0.00606
<b>P4</b>	1.04583 $\pm$ 0.00487	1.04433 $\pm$ 0.00619	1.06504 $\pm$ 0.01237	1.04662 $\pm$ 0.00669
<b>P8</b>	1.05962 $\pm$ 0.00456	1.05591 $\pm$ 0.00722	1.06586 $\pm$ 0.00681	1.0557 $\pm$ 0.00449
<b>O1</b>	1.06271 $\pm$ 0.00439	1.06047 $\pm$ 0.00539	1.0693 $\pm$ 0.00667	1.06127 $\pm$ 0.00532
<b>Poz</b>	1.04472 $\pm$ 0.00428	1.04092 $\pm$ 0.00434	1.05073 $\pm$ 0.00629	1.04513 $\pm$ 0.00606
<b>O2</b>	1.06416 $\pm$ 0.00534	1.06315 $\pm$ 0.00712	1.07157 $\pm$ 0.00727	1.06105 $\pm$ 0.00587
<b>T7</b>	1.08331 $\pm$ 0.00999	1.05703 $\pm$ 0.00702	1.07102 $\pm$ 0.00734	1.06568 $\pm$ 0.00646
<b>T8</b>	1.06001 $\pm$ 0.01007	1.05597 $\pm$ 0.00635	1.06566 $\pm$ 0.00716	1.05525 $\pm$ 0.00816

Table S17. Quantitative analysis of sample entropy of EEG across various electrodes in states of treatment group subjects. Mean $\pm$ SEM.

<b>Electrodes</b>	<b>No SD</b>	<b>SD</b>	<b>SD+Air-puff</b>	<b>SD+Nasal resp</b>
<b>Fp1</b>	1.19396 $\pm$ 0.13443	1.01782 $\pm$ 0.10343	1.19639 $\pm$ 0.12326	1.12533 $\pm$ 0.10509
<b>Fpz</b>	1.03069 $\pm$ 0.06693	0.99274 $\pm$ 0.06475	1.10345 $\pm$ 0.07087	0.93176 $\pm$ 0.05592
<b>AFz</b>	0.98888 $\pm$ 0.07444	0.90257 $\pm$ 0.04853	1.07318 $\pm$ 0.087	0.92484 $\pm$ 0.05825
<b>Fp2</b>	1.21475 $\pm$ 0.10468	1.03214 $\pm$ 0.07932	1.15705 $\pm$ 0.12307	1.06911 $\pm$ 0.07547
<b>F7</b>	1.05495 $\pm$ 0.04659	1.00555 $\pm$ 0.04097	1.19192 $\pm$ 0.07207	1.09296 $\pm$ 0.05964
<b>F3</b>	1.06882 $\pm$ 0.06377	1.08753 $\pm$ 0.05827	1.14403 $\pm$ 0.05315	1.16677 $\pm$ 0.05541
<b>Fz</b>	0.94651 $\pm$ 0.06789	0.88518 $\pm$ 0.06062	0.99409 $\pm$ 0.07239	0.93188 $\pm$ 0.06951
<b>F4</b>	1.07277 $\pm$ 0.07816	0.98634 $\pm$ 0.04749	1.07572 $\pm$ 0.05129	0.93912 $\pm$ 0.05813
<b>F8</b>	1.21937 $\pm$ 0.05438	1.07325 $\pm$ 0.05382	1.22299 $\pm$ 0.07843	1.17909 $\pm$ 0.07891
<b>FC5</b>	1.21707 $\pm$ 0.04824	1.10058 $\pm$ 0.04771	1.30023 $\pm$ 0.0798	1.17127 $\pm$ 0.03799
<b>FC1</b>	1.11168 $\pm$ 0.07875	1.01479 $\pm$ 0.05391	1.05243 $\pm$ 0.06462	1.12651 $\pm$ 0.07878
<b>FC2</b>	1.05515 $\pm$ 0.06617	0.89176 $\pm$ 0.07132	1.05248 $\pm$ 0.05449	0.92743 $\pm$ 0.05499
<b>FC6</b>	1.2104 $\pm$ 0.04403	1.12418 $\pm$ 0.04333	1.22165 $\pm$ 0.07158	1.07039 $\pm$ 0.04963
<b>C3</b>	1.32416 $\pm$ 0.06546	1.12817 $\pm$ 0.05815	1.29542 $\pm$ 0.05925	1.12765 $\pm$ 0.06561
<b>Cz</b>	0.80977 $\pm$ 0.06299	0.85626 $\pm$ 0.04867	0.99138 $\pm$ 0.05535	0.90565 $\pm$ 0.06355
<b>C4</b>	1.21347 $\pm$ 0.07771	1.19367 $\pm$ 0.07648	1.30673 $\pm$ 0.0714	1.20222 $\pm$ 0.05755
<b>CP5</b>	1.23518 $\pm$ 0.04152	1.13317 $\pm$ 0.0535	1.29723 $\pm$ 0.05631	1.12188 $\pm$ 0.04165
<b>CP1</b>	1.02336 $\pm$ 0.04366	0.94037 $\pm$ 0.04515	1.03657 $\pm$ 0.05905	0.98033 $\pm$ 0.05524
<b>CPz</b>	1.02232 $\pm$ 0.05106	0.91893 $\pm$ 0.04784	1.01783 $\pm$ 0.05764	0.9222 $\pm$ 0.03988
<b>CP2</b>	1.04315 $\pm$ 0.04555	0.97249 $\pm$ 0.06564	1.05828 $\pm$ 0.07819	0.93485 $\pm$ 0.04054
<b>CP6</b>	1.14333 $\pm$ 0.07429	1.08645 $\pm$ 0.06597	1.18795 $\pm$ 0.07371	1.03903 $\pm$ 0.05944
<b>P7</b>	1.25678 $\pm$ 0.04147	1.18272 $\pm$ 0.05162	1.28087 $\pm$ 0.08864	1.18052 $\pm$ 0.05334
<b>P3</b>	1.11425 $\pm$ 0.07205	1.02916 $\pm$ 0.07277	1.15185 $\pm$ 0.06152	0.96825 $\pm$ 0.05029
<b>Pz</b>	0.94467 $\pm$ 0.05004	0.86529 $\pm$ 0.039	0.95169 $\pm$ 0.05194	0.86676 $\pm$ 0.04599
<b>P4</b>	1.01925 $\pm$ 0.0714	0.86476 $\pm$ 0.05411	1.04346 $\pm$ 0.08404	0.81062 $\pm$ 0.05172
<b>P8</b>	1.24627 $\pm$ 0.07065	1.11477 $\pm$ 0.08872	1.29563 $\pm$ 0.08869	1.14516 $\pm$ 0.08958
<b>O1</b>	1.10087 $\pm$ 0.05692	1.11831 $\pm$ 0.06461	1.23333 $\pm$ 0.0888	1.11724 $\pm$ 0.05859
<b>POz</b>	0.91272 $\pm$ 0.05956	0.85312 $\pm$ 0.04311	0.93161 $\pm$ 0.05588	0.8515 $\pm$ 0.0378
<b>O2</b>	1.05668 $\pm$ 0.05155	1.09033 $\pm$ 0.06608	1.19569 $\pm$ 0.08042	1.06138 $\pm$ 0.07286
<b>T7</b>	1.32666 $\pm$ 0.05258	1.13774 $\pm$ 0.05878	1.3663 $\pm$ 0.06457	1.27587 $\pm$ 0.05193
<b>T8</b>	1.13145 $\pm$ 0.0892	1.17625 $\pm$ 0.06929	1.25505 $\pm$ 0.04722	1.0515 $\pm$ 0.07341

Table S18. Results of ANOVA analysis of EEG delta power across various electrodes in treatment group subjects.

<b>Electrodes</b>	<b>F(DFn,DFd), p value</b>
<b>Fp1</b>	$F_{2,369,28.43}=7.138, p=0.0020$
<b>Fpz</b>	$F_{2,365,28.38}=1.939, p=0.1564$
<b>AFz</b>	$F_{1,501,18.01}=1.155, p=0.3224$
<b>Fp2</b>	$F_{2,055,24.66}=4.024, p=0.0298$
<b>F7</b>	$F_{2,315,27.78}=3.633, p=0.0340$
<b>F3</b>	$F_{1,048,12.58}=1.485, p=0.2472$
<b>Fz</b>	$F_{1,396,16.75}=1.353, p=0.2751$
<b>F4</b>	$F_{1,038,12.45}=0.808, p=0.3904$
<b>F8</b>	$F_{1,587,19.04}=2.235, p=0.1420$
<b>FC5</b>	$F_{1,734,20.81}=3.112, p=0.0718$
<b>FC1</b>	$F_{1,417,17.01}=1.460, p=0.2543$
<b>FC2</b>	$F_{1,649,19.79}=2.266, p=0.1369$
<b>FC6</b>	$F_{1,165,13.98}=1.339, p=0.2740$
<b>C3</b>	$F_{1,274,15.28}=0.908, p=0.3803$
<b>Cz</b>	$F_{1,844,22.13}=2.165, p=0.1415$
<b>C4</b>	$F_{1,620,19.44}=2.232, p=0.1412$
<b>CP5</b>	$F_{1,467,17.61}=0.493, p=0.5621$
<b>CP1</b>	$F_{2,272,27.27}=2.872, p=0.0678$
<b>CPz</b>	$F_{1,937,23.24}=3.244, p=0.0586$
<b>CP2</b>	$F_{2,183,26.19}=3.572, p=0.0390$
<b>CP6</b>	$F_{1,573,18.88}=0.923, p=0.3926$
<b>P7</b>	$F_{1,368,16.42}=0.502, p=0.5452$
<b>P3</b>	$F_{1,449,17.38}=1.502, p=0.2463$
<b>Pz</b>	$F_{2,128,25.53}=2.760, p=0.0792$
<b>P4</b>	$F_{1,269,15.23}=1.149, p=0.3167$
<b>P8</b>	$F_{1,881,22.58}=0.624, p=0.5354$
<b>O1</b>	$F_{1,515,18.18}=2.011, p=0.1692$
<b>POz</b>	$F_{1,269,15.23}=1.149, p=0.3167$
<b>O2</b>	$F_{1,319,15.83}=1.898, p=0.1879$
<b>T7</b>	$F_{1,936,23.23}=2.052, p=0.1523$
<b>T8</b>	$F_{1,286,15.43}=1.414, p=0.2620$
<b>Topoplot</b>	$F_{2,072,62.15}=24.84, p<0.0001$

Table S19. Results of ANOVA analysis of EEG theta power across various electrodes in treatment group subjects.

<b>Electrodes</b>	<b>F(DFn,DFd), p value</b>
<b>Fp1</b>	$F_{2,110,25.32}=3.086, p=0.0608$
<b>Fpz</b>	$F_{2,632,31.58}=3.411, p=0.0343$
<b>AFz</b>	$F_{1,765,21.17}=2.854, p=0.0854$
<b>Fp2</b>	$F_{2,601,31.21}=5.355, p=0.0059$
<b>F7</b>	$F_{2,471,29.66}=7.472, p=0.0013$
<b>F3</b>	$F_{2,421,29.05}=3.648, p=0.0313$
<b>Fz</b>	$F_{2,191,26.29}=8.635, p=0.0010$
<b>F4</b>	$F_{2,249,26.98}=4.367, p=0.0194$
<b>F8</b>	$F_{2,191,26.29}=1.654, p=0.2102$
<b>FC5</b>	$F_{1,902,22.83}=2.250, p=0.1302$
<b>FC1</b>	$F_{2,120,25.44}=2.108, p=0.1369$
<b>FC2</b>	$F_{1,629,19.55}=0.117, p=0.8511$
<b>FC6</b>	$F_{1,985,23.82}=0.808, p=0.4567$
<b>C3</b>	$F_{1,795,21.54}=0.303, p=0.7179$
<b>Cz</b>	$F_{1,630,19.56}=1.292, p=0.2908$
<b>C4</b>	$F_{2,364,28.36}=1.607, p=0.2157$
<b>CP5</b>	$F_{2,267,27.20}=2.623, p=0.0848$
<b>CP1</b>	$F_{2,115,25.38}=2.629, p=0.0891$
<b>CPz</b>	$F_{1,897,22.77}=1.151, p=0.3315$
<b>CP2</b>	$F_{1,546,18.55}=1.678, p=0.2154$
<b>CP6</b>	$F_{2,123,25.47}=3.294, p=0.0508$
<b>P7</b>	$F_{1,815,21.78}=1.976, p=0.1655$
<b>P3</b>	$F_{1,909,22.91}=3.002, p=0.0716$
<b>Pz</b>	$F_{1,576,18.91}=1.065, p=0.3490$
<b>P4</b>	$F_{1,603,19.24}=2.063, p=0.1605$
<b>P8</b>	$F_{1,804,21.65}=2.415, p=0.1173$
<b>O1</b>	$F_{2,719,32.63}=2.681, p=0.0681$
<b>POz</b>	$F_{1,654,19.85}=2.923, p=0.0853$
<b>O2</b>	$F_{1,957,23.49}=1.804, p=0.1871$
<b>T7</b>	$F_{2,073,24.87}=3.594, p=0.0411$
<b>T8</b>	$F_{1,588,19.05}=0.875, p=0.4098$
<b>Topoplot</b>	$F_{2,101,63.03}=66.97, p<0.0001$

Table S20. Results of ANOVA analysis of EEG alpha power across various electrodes in treatment group subjects.

<b>Electrodes</b>	<b>F(DFn,DFd), p value</b>
<b>Fp1</b>	$F_{1,984,23.81}=1.298, p=0.2915$
<b>Fpz</b>	$F_{1,956,23.47}=1.676, p=0.2090$
<b>AFz</b>	$F_{1,049,12.59}=1.148, p=0.3076$
<b>Fp2</b>	$F_{1,087,13.05}=1.115, p=0.3166$
<b>F7</b>	$F_{2,120,25.45}=0.688, p=0.5199$
<b>F3</b>	$F_{1,119,13.43}=0.940, p=0.3606$
<b>Fz</b>	$F_{1,039,12.47}=1.095, p=0.3182$
<b>F4</b>	$F_{1,181,14.17}=1.190, p=0.3044$
<b>F8</b>	$F_{1,410,16.93}=0.547, p=0.5285$
<b>FC5</b>	$F_{1,366,16.39}=1.460, p=0.2541$
<b>FC1</b>	$F_{1,054,12.64}=0.979, p=0.3461$
<b>FC2</b>	$F_{1,597,19.17}=0.587, p=0.5290$
<b>FC6</b>	$F_{1,483,17.80}=0.852, p=0.4115$
<b>C3</b>	$F_{1,989,23.87}=1.076, p=0.3566$
<b>Cz</b>	$F_{1,487,17.85}=0.196, p=0.7592$
<b>C4</b>	$F_{1,344,16.12}=0.733, p=0.4438$
<b>CP5</b>	$F_{1,156,13.87}=1.726, p=0.2127$
<b>CP1</b>	$F_{1,055,12.67}=0.857, p=0.3781$
<b>CPz</b>	$F_{1,518,18.22}=0.645, p=0.4952$
<b>CP2</b>	$F_{1,589,19.07}=1.331, p=0.2816$
<b>CP6</b>	$F_{1,451,17.42}=0.596, p=0.3865$
<b>P7</b>	$F_{1,562,18.75}=0.243, p=0.7321$
<b>P3</b>	$F_{1,316,15.79}=1.001, p=0.3563$
<b>Pz</b>	$F_{1,042,12.51}=0.823, p=0.3044$
<b>P4</b>	$F_{1,457,17.49}=2.624, p=0.1128$
<b>P8</b>	$F_{1,778,21.34}=1.038, p=0.3636$
<b>O1</b>	$F_{1,796,21.56}=0.537, p=0.5734$
<b>POz</b>	$F_{1,131,13.58}=0.840, p=0.3898$
<b>O2</b>	$F_{1,559,18.71}=0.978, p=0.3745$
<b>T7</b>	$F_{1,095,13.14}=0.0887, p=0.7930$
<b>T8</b>	$F_{1,198,14.37}=2.028, p=0.1755$
<b>Topoplot</b>	$F_{1,324,39.73}=9.373, p=0.0019$

Table S21. Results of ANOVA analysis of EEG beta power across various electrodes in treatment group subjects.

<b>Electrodes</b>	<b>F(DFn,DFd), p value</b>
<b>Fp1</b>	$F_{2,144,25.73}=4.716, p=0.0163$
<b>Fpz</b>	$F_{1,919,23.03}=0.691, p=0.5053$
<b>AFz</b>	$F_{1,680,20.16}=0.469, p=0.5995$
<b>Fp2</b>	$F_{1,825,21.90}=1.580, p=0.2289$
<b>F7</b>	$F_{2,411,28.94}=5.217, p=0.0083$
<b>F3</b>	$F_{1,429,17.15}=1.636, p=0.2236$
<b>Fz</b>	$F_{1,727,20.73}=2.143, p=0.1475$
<b>F4</b>	$F_{1,415,16.97}=4.296, p=0.0422$
<b>F8</b>	$F_{2,092,25.11}=2.662, p=0.0873$
<b>FC5</b>	$F_{1,906,22.88}=1.820, p=0.1858$
<b>FC1</b>	$F_{1,816,21.79}=1.781, p=0.1939$
<b>FC2</b>	$F_{1,573,18.88}=3.770, p=0.0509$
<b>FC6</b>	$F_{2,585,31.02}=2.436, p=0.0912$
<b>C3</b>	$F_{2,046,24.55}=2.419, p=0.1089$
<b>Cz</b>	$F_{1,779,21.35}=2.668, p=0.0975$
<b>C4</b>	$F_{1,388,16.66}=1.937, p=0.1815$
<b>CP5</b>	$F_{1,599,19.19}=2.463, p=0.1203$
<b>CP1</b>	$F_{1,276,15.31}=3.293, p=0.0815$
<b>CPz</b>	$F_{2,081,24.97}=3.220, p=0.0553$
<b>CP2</b>	$F_{1,816,21.79}=1.317, p=0.2862$
<b>CP6</b>	$F_{1,915,22.98}=2.568, p=0.1005$
<b>P7</b>	$F_{2,212,26.55}=4.882, p=0.0134$
<b>P3</b>	$F_{1,269,15.23}=1.801, p=0.2013$
<b>Pz</b>	$F_{1,741,20.89}=2.768, p=0.0919$
<b>P4</b>	$F_{1,949,23.39}=5.727, p=0.0099$
<b>P8</b>	$F_{1,867,22.40}=1.386, p=0.2697$
<b>O1</b>	$F_{2,010,24.12}=1.215, p=0.3143$
<b>POz</b>	$F_{1,471,17.65}=0.891, p=0.3979$
<b>O2</b>	$F_{1,963,23.55}=1.037, p=0.3691$
<b>T7</b>	$F_{1,528,18.34}=2.846, p=0.0948$
<b>T8</b>	$F_{1,594,19.13}=1.438, p=0.2587$
<b>Topoplot</b>	$F_{2,509,75.26}=35.15, p<0.0001$

Table S22. Results of ANOVA analysis of EEG slow gamma power across various electrodes in treatment group subjects

<b>Electrodes</b>	<b>F(DFn,DFd), p value</b>
<b>Fp1</b>	$F_{1.101,13.21}=1.037$ , p=0.3350
<b>Fpz</b>	$F_{2.010,24.11}=1.018$ , p=0.3767
<b>AFz</b>	$F_{1.777,21.32}=1.715$ , p=0.2054
<b>Fp2</b>	$F_{1.684,20.21}=1.364$ , p=0.2746
<b>F7</b>	$F_{1.914,22.97}=2.162$ , p=0.1396
<b>F3</b>	$F_{1.967,23.61}=1.786$ , p=0.1899
<b>Fz</b>	$F_{1.150,13.80}=2.469$ , p=0.1366
<b>F4</b>	$F_{1.304,15.65}=2.805$ , p=0.1066
<b>F8</b>	$F_{1.925,23.11}=1.886$ , p=0.1753
<b>FC5</b>	$F_{1.743,20.91}=1.192$ , p=0.3176
<b>FC1</b>	$F_{2.352,28.23}=1.839$ , p=0.1725
<b>FC2</b>	$F_{1.590,19.08}=3.753$ , p=0.0508
<b>FC6</b>	$F_{2.110,25.32}=3.452$ , p=0.0450
<b>C3</b>	$F_{1.428,17.13}=1.814$ , p=0.1969
<b>Cz</b>	$F_{1.783,21.40}=2.011$ , p=0.1618
<b>C4</b>	$F_{1.141,13.69}=2.789$ , p=0.1146
<b>CP5</b>	$F_{1.382,16.59}=1.646$ , p=0.2224
<b>CP1</b>	$F_{1.664,19.97}=3.615$ , p=0.0529
<b>CPz</b>	$F_{2.062,24.75}=4.347$ , p=0.0232
<b>CP2</b>	$F_{1.429,17.15}=2.970$ , p=0.0914
<b>CP6</b>	$F_{1.352,16.22}=2.993$ , p=0.0933
<b>P7</b>	$F_{2.100,25.20}=5.461$ , p=0.0098
<b>P3</b>	$F_{1.053,12.63}=1.442$ , p=0.2541
<b>Pz</b>	$F_{1.950,23.40}=3.994$ , p=0.0331
<b>P4</b>	$F_{1.030,12.36}=2.100$ , p=0.1723
<b>P8</b>	$F_{2.092,25.10}=3.442$ , p=0.0459
<b>O1</b>	$F_{1.880,22.56}=2.896$ , p=0.0787
<b>POz</b>	$F_{1.204,14.44}=1.033$ , p=0.3420
<b>O2</b>	$F_{1.497,17.97}=2.494$ , p=0.1215
<b>T7</b>	$F_{1.898,22.78}=3.536$ , p=0.0481
<b>T8</b>	$F_{1.419,17.02}=2.026$ , p=0.1701
<b>Topoplot</b>	$F_{2.365,70.96}=31.89$ , p<0.0001

Table S23. Results of ANOVA analysis of EEG medium gamma power across various electrodes in treatment group subjects

<b>Electrodes</b>	<b>F(DFn,DFd), p value</b>
<b>Fp1</b>	$F_{1,157,13.88}=1.140, p=0.3143$
<b>Fpz</b>	$F_{1,868,22.41}=1.903, p=0.1742$
<b>AFz</b>	$F_{1,587,19.04}=2.453, p=0.1215$
<b>Fp2</b>	$F_{1,489,17.87}=1.709, p=0.2112$
<b>F7</b>	$F_{1,297,15.57}=1.317, p=0.2809$
<b>F3</b>	$F_{2,211,26.53}=1.639, p=0.2117$
<b>Fz</b>	$F_{1,057,12.69}=2.179, p=0.1641$
<b>F4</b>	$F_{2,005,24.06}=4.992, p=0.0153$
<b>F8</b>	$F_{1,813,21.75}=1.805, p=0.1902$
<b>FC5</b>	$F_{1,381,16.57}=0.595, p=0.5031$
<b>FC1</b>	$F_{2,013,24.15}=3.763, p=0.0375$
<b>FC2</b>	$F_{1,697,20.36}=5.185, p=0.0189$
<b>FC6</b>	$F_{1,430,17.16}=1.591, p=0.2309$
<b>C3</b>	$F_{1,430,17.16}=1.591, p=0.2309$
<b>Cz</b>	$F_{1,825,21.90}=3.138, p=0.0673$
<b>C4</b>	$F_{1,307,15.68}=2.549, p=0.1244$
<b>CP5</b>	$F_{1,246,14.96}=1.672, p=0.2195$
<b>CP1</b>	$F_{1,416,16.99}=2.975, p=0.0917$
<b>CPz</b>	$F_{1,858,22.30}=5.545, p=0.0125$
<b>CP2</b>	$F_{1,245,14.94}=2.859, p=0.1058$
<b>CP6</b>	$F_{1,711,20.53}=2.127, p=0.1499$
<b>P7</b>	$F_{2,267,27.20}=5.935, p=0.0056$
<b>P3</b>	$F_{1,685,20.22}=5.866, p=0.0128$
<b>Pz</b>	$F_{2,000,24.00}=9.157, p=0.0011$
<b>P4</b>	$F_{2,111,25.34}=5.271, p=0.0111$
<b>P8</b>	$F_{2,233,26.80}=4.433, p=0.0187$
<b>O1</b>	$F_{1,565,18.78}=1.116, p=0.3343$
<b>POz</b>	$F_{2,080,24.96}=3.810, p=0.0345$
<b>O2</b>	$F_{1,857,22.28}=3.516, p=0.0501$
<b>T7</b>	$F_{1,563,18.76}=1.567, p=0.2341$
<b>T8</b>	$F_{1,516,18.20}=0.968, p=0.3755$
<b>Topoplot</b>	$F_{2,174,65.22}=32.68, p<0.0001$

Table S24. Results of ANOVA analysis of EEG fast gamma power across various electrodes in treatment group subjects

<b>Electrodes</b>	<b>F(DFn,DFd), p value</b>
<b>Fp1</b>	$F_{1,180,14.17}=1.214, p=0.2992$
<b>Fpz</b>	$F_{1,796,21.55}=1.953, p=0.1691$
<b>AFz</b>	$F_{1,274,15.29}=1.862, p=0.1933$
<b>Fp2</b>	$F_{1,316,15.79}=1.661, p=0.2207$
<b>F7</b>	$F_{1,061,12.73}=0.970, p=0.3487$
<b>F3</b>	$F_{1,528,18.34}=1.589, p=0.2305$
<b>Fz</b>	$F_{1,024,12.29}=1.479, p=0.2478$
<b>F4</b>	$F_{1,851,22.21}=3.294, p=0.0592$
<b>F8</b>	$F_{1,232,14.78}=1.470, p=0.2516$
<b>FC5</b>	$F_{1,383,15.59}=0.628, p=0.4893$
<b>FC1</b>	$F_{2,123,25.47}=2.866, p=0.0726$
<b>FC2</b>	$F_{2,064,24.76}=4.287, p=0.0242$
<b>FC6</b>	$F_{1,454,17.44}=2.443, p=0.1273$
<b>C3</b>	$F_{1,445,17.33}=1.387, p=0.2685$
<b>Cz</b>	$F_{1,524,18.29}=1.991, p=0.1714$
<b>C4</b>	$F_{1,343,16.12}=2.411, p=0.1341$
<b>CP5</b>	$F_{1,208,14.50}=1.175, p=0.3086$
<b>CP1</b>	$F_{1,206,14.47}=2.356, p=0.1437$
<b>CPz</b>	$F_{1,440,17.29}=2.901, p=0.0950$
<b>CP2</b>	$F_{1,150,13.80}=2.582, p=0.1281$
<b>CP6</b>	$F_{1,054,12.65}=1.370, p=0.2660$
<b>P7</b>	$F_{2,276,27.31}=4.198, p=0.0217$
<b>P3</b>	$F_{1,960,23.52}=5.530, p=0.0111$
<b>Pz</b>	$F_{1,772,21.27}=8.763, p=0.0023$
<b>P4</b>	$F_{1,118,13.41}=0.8907, p=0.3739$
<b>P8</b>	$F_{2,432,29.19}=2.702, p=0.0742$
<b>O1</b>	$F_{1,750,21.00}=2.074, p=0.1549$
<b>POz</b>	$F_{1,165,13.98}=1.127, p=0.3175$
<b>O2</b>	$F_{2,001,24.02}=3.439, p=0.0486$
<b>T7</b>	$F_{1,417,17.00}=2.086, p=0.1633$
<b>T8</b>	$F_{1,595,19.14}=1.005, p=0.3676$
<b>Topoplot</b>	$F_{2,087,62.60}=36.33, p<0.0001$

Table S25. Results of ANOVA analysis of Higuchi's fractal dimension of EEG across various electrodes in treatment group subjects

<b>Electrodes</b>	<b>F(DFn,DFd), p value</b>
<b>Fp1</b>	$F_{1,973,23.67}=2.007, p=0.1571$
<b>Fpz</b>	$F_{2,439,29.27}=2.933, p=0.0596$
<b>AFz</b>	$F_{1,924,23.09}=2.871, p=0.0788$
<b>Fp2</b>	$F_{2,625,31.50}=4.535, p=0.0120$
<b>F7</b>	$F_{1,645,19.74}=1.001, p=0.3708$
<b>F3</b>	$F_{1,810,21.72}=1.435, p=0.2587$
<b>Fz</b>	$F_{1,533,18.40}=2.697, p=0.1046$
<b>F4</b>	$F_{2,020,24.24}=2.656, p=0.0901$
<b>F8</b>	$F_{2,019,24.22}=3.172, p=0.0593$
<b>FC5</b>	$F_{2,377,28.53}=4.041, P=0.0229$
<b>FC1</b>	$F_{1,759,21.10}=1.800, p=0.1921$
<b>FC2</b>	$F_{2,312,27.75}=3.624, p=0.0344$
<b>FC6</b>	$F_{1,757,21.08}=3.774, p=0.0446$
<b>C3</b>	$F_{2,035,24.42}=3.916, p=0.0329$
<b>Cz</b>	$F_{1,896,22.75}=0.810, p=0.4513$
<b>C4</b>	$F_{1,768,21.22}=1.787, p=0.1941$
<b>CP5</b>	$F_{2,529,30.35}=4.450, p=0.0141$
<b>CP1</b>	$F_{2,041,24.49}=2.329, p=0.1177$
<b>CPz</b>	$F_{1,517,18.21}=1.990, p=0.1718$
<b>CP2</b>	$F_{2,125,25.50}=1.466, p=0.2497$
<b>CP6</b>	$F_{1,802,21.62}=4.036, p=0.0360$
<b>P7</b>	$F_{2,011,24.14}=4.902, p=0.0162$
<b>P3</b>	$F_{1,865,22.38}=3.126, p=0.0665$
<b>Pz</b>	$F_{1,827,21.92}=3.861, p=0.0399$
<b>P4</b>	$F_{1,754,21.05}=5.473, p=0.0148$
<b>P8</b>	$F_{1,775,21.30}=2.781, p=0.0898$
<b>O1</b>	$F_{2,193,26.31}=1.622, P=0.2153$
<b>POz</b>	$F_{1,363,16.35}=2.028, p=0.1714$
<b>O2</b>	$F_{2,128,25.53}=3.700, p=0.0365$
<b>T7</b>	$F_{2,187,26.25}=2.333, p=0.1127$
<b>T8</b>	$F_{2,370,28.45}=1.987, p=0.1491$
<b>Topoplot</b>	$F_{2,229,66.88}=98.94, p<0.0001$

Table S26. Results of ANOVA analysis of Katz's fractal dimension of EEG across various electrodes in treatment group subjects

<b>Electrodes</b>	<b>F(DFn,DFd), p value</b>
<b>Fp1</b>	$F_{2,281,27.36}=4.462, p=0.0174$
<b>Fpz</b>	$F_{2,158,25.90}=2.040, p=0.1476$
<b>AFz</b>	$F_{1944,23.33}=2.307, p=0.1230$
<b>Fp2</b>	$F_{2,076,24.91}=1.911, p=0.1679$
<b>F7</b>	$F_{1,468,17.61}=1.447, p=0.2568$
<b>F3</b>	$F_{2,221,26.65}=1.271, p=0.2994$
<b>Fz</b>	$F_{1,505,18.06}=1.262, p=0.2962$
<b>F4</b>	$F_{1,942,23.31}=3.537, p=0.0467$
<b>F8</b>	$F_{1,939,23.27}=2.482, p=0.1067$
<b>FC5</b>	$F_{2,482,29.79}=3.377, p=0.0386$
<b>FC1</b>	$F_{1,844,22.13}=1.667, p=0.2126$
<b>FC2</b>	$F_{1,806,21.67}=4.265, p=0.0307$
<b>FC6</b>	$F_{1,922,23.06}=2.958, p=0.0737$
<b>C3</b>	$F_{1,480,17.76}=2.580, p=0.1152$
<b>Cz</b>	$F_{2,045,24.54}=1.416, p=0.2621$
<b>C4</b>	$F_{1,271,15.25}=1.770, p=0.2054$
<b>CP5</b>	$F_{1,864,22.37}=2.686, p=0.0932$
<b>CP1</b>	$F_{2,498,29.98}=3.791, p=0.0261$
<b>CPz</b>	$F_{2,177,26.13}=2.594, p=0.0898$
<b>CP2</b>	$F_{1,752,21.03}=2.943, p=0.0804$
<b>CP6</b>	$F_{1,468,17.61}=3.294, p=0.0732$
<b>P7</b>	$F_{1,943,23.32}=4.265, p=0.0273$
<b>P3</b>	$F_{1,330,15.96}=2.885, p=0.1006$
<b>Pz</b>	$F_{1,650,19.80}=1.915, p=0.1781$
<b>P4</b>	$F_{1,359,16.31}=5.665, p=0.0219$
<b>P8</b>	$F_{1,846,22.15}=2.853, p=0.0826$
<b>O1</b>	$F_{2,112,25.35}=1.180, p=0.3256$
<b>POz</b>	$F_{1,696,20.35}=2.925, p=0.0836$
<b>O2</b>	$F_{1,993,23.91}=2.005, p=0.1568$
<b>T7</b>	$F_{2,526,30.32}=4.436, p=0.0143$
<b>T8</b>	$F_{2,345,28.14}=1.209, p=0.3185$
<b>Topoplot</b>	$F_{1,943,58.28}=50.36, p<0.0001$

Table S27. Results of ANOVA analysis of sample entropy of EEG across various electrodes in treatment group subjects

<b>Electrodes</b>	<b>F<sub>(DFn,DFd)</sub>, p value</b>
<b>Fp1</b>	F <sub>2,676,32.11</sub> =2.015, p=0.1372
<b>Fpz</b>	F <sub>2,352,28.22</sub> =3.054, p=0.0555
<b>AFz</b>	F <sub>2,187,26.25</sub> =3.098, p=0.0579
<b>Fp2</b>	F <sub>2,414,28.97</sub> =1.913, p=0.1591
<b>F7</b>	F <sub>2,171,26.06</sub> =4.798, p=0.0149
<b>F3</b>	F <sub>2,422,27.53</sub> =1.689, p=0.1978
<b>Fz</b>	F <sub>2,294,22.72</sub> =1.931, p=0.1593
<b>F4</b>	F <sub>2,012,24.14</sub> =3.135, p=0.0613
<b>F8</b>	F <sub>2,462,29.55</sub> =3.120, p=0.0495
<b>FC5</b>	F <sub>2,050,24.60</sub> =3.797, p=0.0356
<b>FC1</b>	F <sub>2,029,24.35</sub> =1.555, p=0.2313
<b>FC2</b>	F <sub>2,623,31.47</sub> =2.826, p=0.0610
<b>FC6</b>	F <sub>1,637,19.64</sub> =3.477, p=0.0590
<b>C3</b>	F <sub>2,054,24.64</sub> =4.396, p=0.0225
<b>Cz</b>	F <sub>2,136,25.63</sub> =2.087, p=0.1421
<b>C4</b>	F <sub>1,453,17.44</sub> =1.463, p=0.2538
<b>CP5</b>	F <sub>2,446,29.35</sub> =4.051, p=0.0215
<b>CP1</b>	F <sub>2,469,29.63</sub> =2.616, p=0.0795
<b>CPz</b>	F <sub>1,746,20.95</sub> =3.836, p=0.0431
<b>CP2</b>	F <sub>2,283,27.39</sub> =1.692, p=0.2000
<b>CP6</b>	F <sub>1,663,19.95</sub> =2.220, p=0.1412
<b>P7</b>	F <sub>2,190,26.28</sub> =1.323, p=0.2851
<b>P3</b>	F <sub>2,154,25.85</sub> =3.519, p=0.0415
<b>Pz</b>	F <sub>1,929,23.15</sub> =2.228, p=0.1318
<b>P4</b>	F <sub>2,199,26.39</sub> =4.589, p=0.0170
<b>P8</b>	F <sub>1,893,22.72</sub> =3.573, p=0.0469
<b>O1</b>	F <sub>2,164,25.97</sub> =2.415, p=0.1055
<b>POz</b>	F <sub>1,424,17.09</sub> =1.556, p=0.2370
<b>O2</b>	F <sub>2,151,25.82</sub> =3.710, p=0.0356
<b>T7</b>	F <sub>2,589,31.07</sub> =3.643, p=0.0282
<b>T8</b>	F <sub>2,213,26.56</sub> =4.076, p=0.0253
<b>Topoplot</b>	F <sub>2,587,77.61</sub> =56.12, p<0.0001

Table S28. Specific p-values for statistical comparisons of intra-DMN cross-correlation among different states and No SD across various frequency bands. An increase in correlation is indicated by a plus sign, while a decrease is indicated by a minus sign. L (left), Cnt (center) and R (right). vmPFC: ventromedial prefrontal cortex, dmPFC: dorsomedial prefrontal cortex, PCC: posterior cingulate cortex, SD: sleep deprivation, SD+AP: sleep deprivation+nasal air-puffs, SD+NR: sleep deprivation+nasal respiration; paired t-test.

Frequency band	DMN paired region	SD vs. No SD	SD+AP vs. No SD	SD+NR vs. No SD
Delta	dmPFC(Cnt)-dmPFC(R)	-0.0102	-0.4854	0.9084
	dmPFC(L)-dmPFC(R)	0.9294	-0.0049	-0.0445
	Parietal(L)-Parietal(R)	0.4692	-0.0051	-0.2052
	dmPFC(L)-Parietal(R)	0.7866	-0.1019	0.0015
Theta	dmPFC(Cnt)-dmPFC(R)	-0.0261	-0.3518	0.4504
	dmPFC(Cnt)-PCC(R)	-0.0414	-0.1380	-0.3638
	dmPFC(Cnt)-PCC(L)	0.9878	0.0290	0.1509
	dmPFC(Cnt)-Preconeus (R)	0.6243	-0.0127	0.4903
	vmPFC(R)-dmPFC(R)	-0.5232	-0.6594	0.0223
	Preconeus(L)-Preconeus(R)	0.4292	0.2038	0.0219
Alpha	Preconeus(L)-Preconeus(R)	0.0132	0.0136	0.0106
Beta	Preconeus(L)-Preconeus(R)	0.0219	0.0074	0.0406
	Preconeus(L)-Parietal(R)	0.0177	0.7074	0.0120
	Preconeus(Cnt)-vmPFC(R)	0.3482	0.3561	-0.0174
	PCC(Cnt)-Preconeus(L)	0.2269	0.8009	-0.0392
	Preconeus(R)-Parietal(R)	0.1122	-0.9788	0.04023
	PCC(Cnt)-Preconeus(R)	0.2195	0.7067	-0.0030
	PCC(Cnt)-Parietal(R)	0.5012	0.8274	-0.0268
Slow gamma	PCC(Cnt)-Parietal(R)	-0.0143	0.1279	-0.0268
	PCC(Cnt)-dmPFC(R)	0.0086	0.3825	0.1717
	dmPFC(Cnt)-PCC(Cnt)	0.3869	0.6668	0.0124
	PCC(Cnt)-Preconeus(L)	0.2991	0.5519	-0.0245
	PCC(Cnt)-Preconeus(R)	0.2826	0.3038	-0.0282
	PCC(R)-Preconeus(R)	0.3617	0.5349	0.0497
Medium gamma	PCC(Cnt)-Parietal(R)	-0.0493	0.1252	0.1679
	dmPFC(Cnt)-Preconeus(Cnt)	0.0425	-0.7708	-0.1840
	dmPFC(Cnt)-dmPFC(L)	-0.7821	-0.7343	-0.0065
Fast gamma	PCC(Cnt)-Preconeus(R)	-0.0391	0.2027	-0.0165
	dmPFC(Cnt)-dmPFC(L)	-0.5835	-0.1283	-0.0139
	Preconeus(Cnt)-vmPFC(L)	0.0485	0.2797	0.7573
	Preconeus(Cnt)-vmPFC(R)	0.0131	0.5812	0.6784
	PCC(Cnt)-Preconeus(R)	-0.0453	0.70267	-0.0365
	Preconeus(Cnt)-PCC(L)	0.2606	-0.7600	-0.0404
	PCC(Cnt)-Parietal(R)	0.3439	-0.0124	0.3759

Table S29. Specific p-values for statistical comparisons of intra-DMN coherence among different states and No SD across various frequency bands. An increase in coherence is indicated by a plus sign, while a decrease is indicated by a minus sign. L (left), Cnt (center) and R (right). vmPFC: ventromedial prefrontal cortex, dmPFC: dorsomedial prefrontal cortex, PCC: posterior cingulate cortex, SD: sleep deprivation, SD+AP: sleep deprivation+nasal air-puffs, SD+NR: sleep deprivation+nasal respiration; paired t-test.

Frequency band	DMN paired region	SD vs. No SD	SD+AP vs. No SD	SD+NR vs. No SD
Delta	dmPFC(Cnt)-dmPFC(R)	-0.0292	-0.4009	0.6933
	vmPFC(R)-dmPFC(R)	-0.0240	-0.1193	0.8584
	PCC(L)-PCC(R)	0.0221	0.0904	0.4116
	vmPFC(L)-Parietal(L)	-0.1546	-0.0389	0.7976
	dmPFC(L)-Parietal(L)	-0.5668	-0.0393	-0.8679
	Parietal(L)- Parietal(R)	-0.2780	-0.0251	0.8057
	Parietal(L)-Precuneus(Cnt)	0.8533	-0.0336	0.5623
	dmPFC(Cnt)-Precuneus(R)	0.7977	0.0376	0.3659
	vmPFC(R)-PCC(R)	0.7229	-0.9839	0.0201
Theta	vmPFC(L)-Precuneus(Cnt)	0.1321	0.0256	0.2769
	dmPFC(Cnt)-Precuneus(R)	0.6586	0.0084	0.0882
	Parietal(L)-Precuneus(R)	0.2735	0.0393	0.9692
	Precuneus(Cnt)-Precuneus(L)	0.4989	0.0379	0.7344
	PCC(L)-Precuneus(L)	0.4403	0.0386	0.3985
	dmPFC(R)-PCC(L)	-0.3384	-0.0329	-0.1422
	vmPFC(R)-dmPFC(R)	-0.9520	0.8039	0.0239
Alpha	PCC(Cnt)-Precuneus(L)	0.0133	0.5033	0.0215
	PCC(Cnt)-Precuneus(R)	0.0242	0.3386	0.0536
	vmPFC(R)-dmPFC(L)	0.1668	0.0108	0.1482
	dmPFC(Cnt)-Precuneus(R)	0.2567	0.0313	0.1057
	Parietal(L)-Precuneus(R)	0.3419	0.0281	0.1166
	dmPFC(R)-PCC(R)	-0.1780	-0.0243	-0.1967
	PCC(R)-Precuneus(L)	-0.0937	-0.0250	-0.0082
Beta	PCC(Cnt)-Precuneus(R)	0.0237	0.4537	0.0094
	PCC(L)-Precuneus(L)	-0.0331	-0.1378	-0.8681
	PCC(Cnt)-Precuneus(L)	0.1299	0.8569	0.0084
Slow gamma	PCC(Cnt)-Precuneus(R)	0.0363	0.4998	0.0276
	dmPFC(Cnt)-PCC(L)	-0.2092	-0.0039	-0.5861
	vmPFC(R)-Precuneus(R)	0.3670	0.5087	0.0379
Medium gamma	dmPFC(Cnt)-Parietal(R)	0.0253	0.0598	0.2164
	Parietal(R)-Precuneus(L)	0.0299	0.8844	0.2363
	PCC(Cnt)-Precuneus(R)	0.1478	0.3699	0.0406