

Supplementary Data File 3

eTable 1 . Normality Test – All participants (n=30)

Outcome Variable	Mean	Standard Deviation	Skewness	Kurtosis	Shapiro-Wilk Sig.		
					<i>W</i> -value	<i>p</i> -value	
MMSE	27.467	3.884	-3.410	14.293	0.615	0.000**	Not Normal
PDQ_Total-T0	20.867	17.393	1.454	2.735	0.874	0.002**	Not Normal
PDQ_Mobility-T0	5.867	6.230	0.999	0.093	0.856	0.001**	Not Normal
PDQ_Activities of Daily Living-T0	2.833	3.705	1.740	2.473	0.756	0.000**	Not Normal
PDQ_Emotional Well-being-T0	3.700	4.757	1.878	3.508	0.764	0.000**	Not Normal
PDQ_Stigma-T0	1.667	3.836	2.171	3.227	0.485	0.000**	Not Normal
PDQ_Social Support-T0	0.133	0.571	4.782	23.774	0.254	0.000**	Not Normal
PDQ_Cognition-T0	3.067	2.625	1.099	1.574	0.903	0.010*	Not Normal
PDQ_Communication-T0	0.700	1.393	2.301	4.795	0.573	0.000**	Not Normal
PDQ_Bodily Discomfort-T0	2.900	3.458	1.211	0.713	0.819	0.000**	Not Normal
PDQ_Total-T1	11.733	11.338	2.597	9.814	0.751	0.000**	Not Normal
PDQ_Mobility-T1	3.333	4.278	1.212	0.060	0.760	0.000**	Not Normal
PDQ_Activities of Daily Living-T1	1.667	2.510	1.444	0.793	0.707	0.000**	Not Normal
PDQ_Emotional Well-being-T1	1.767	3.093	3.607	15.873	0.573	0.000**	Not Normal
PDQ_Stigma-T1	0.633	2.205	4.080	17.866	0.327	0.000**	Not Normal
PDQ_Social Support-T1	0.000	0.000	0.000	0.000	0.000	0.000**	Not Normal
PDQ_Cognition-T1	2.067	1.946	0.351	-1.196	0.871	0.002**	Not Normal
PDQ_Communication-T1	0.233	0.504	2.153	4.249	0.518	0.000**	Not Normal
PDQ_Bodily Discomfort-T1	2.033	2.456	1.051	-0.110	0.808	0.000**	Not Normal
UPDRS-T0	35.433	19.986	0.609	-0.743	0.912	0.017*	Not Normal

Outcome Variable	Mean	Standard Deviation	Skewness	Kurtosis	Shapiro-Wilk Sig.		
					<i>W</i> -value	<i>p</i> -value	
UPDRS-T1	25.333	18.144	1.340	1.557	0.878	0.003**	Not Normal
UPDRS_Motor-T0	8.567	4.439	0.340	-0.444	0.967	0.460	Normal
UPDRS_Motor-T1	7.567	5.063	0.443	-0.910	0.934	0.061	Normal
UPDRS_NonMotor-T0	8.033	6.815	1.180	1.599	0.901	0.009**	Not Normal
UPDRS_NonMotor-T1	5.200	5.307	1.682	2.770	0.813	0.000**	Not Normal
NMSS-T0	22.267	19.244	0.966	0.152	0.902	0.009**	Not Normal
NMSS-T1	14.433	13.637	2.138	6.802	0.812	0.000**	Not Normal
HAMD-T0	7.067	7.239	2.279	5.441	0.727	0.000**	Not Normal
HAMD-T1	4.867	4.652	3.412	14.943	0.644	0.000**	Not Normal
MH&Y-T0	2.000	0.731	0.567	0.356	0.925	0.037*	Not Normal
MH&Y-T1	1.767	0.751	1.010	1.175	0.864	0.001**	Not Normal
S&E-T0	87.000	10.875	-1.761	4.445	0.767	0.000**	Not Normal
S&E-T1	86.333	18.286	-2.132	3.662	0.607	0.000**	Not Normal
PFS-T0	38.467	15.451	0.815	-0.090	0.920	0.027*	Not Normal
PFS-T1	37.567	11.196	1.063	0.274	0.885	0.004**	Not Normal
TUGT-T0	11.874	3.799	1.320	0.821	0.827	0.000**	Not Normal
TUGT-T1	11.147	4.420	2.489	8.448	0.749	0.000**	Not Normal
10M-T0	9.329	2.948	1.789	3.087	0.771	0.000**	Not Normal
10M-T1	9.015	2.927	2.086	4.731	0.766	0.000**	Not Normal
Berg Balance-T0	53.467	3.192	-1.310	0.503	0.772	0.000**	Not Normal
Berg Balance-T1	54.000	3.248	-1.436	1.854	0.786	0.000**	Not Normal
FGA-T0	25.267	4.697	-1.016	-0.250	0.835	0.000**	Not Normal
FGA-T1	26.400	4.039	-1.359	0.880	0.806	0.000**	Not Normal

eTable 2a: Complete List of Adverse Events Across all Participants

Mild Adverse Events	Week 1		Week 2		Week 3		Week 4	
	Active-tPCS (n=18)	Sham-tPCS (n=12)	Active-tPCS (n=18)	Sham-tPCS (n=12)	Active-tPCS (n=18)	Sham-tPCS (n=12)	Active-tPCS (n=18)	Sham-tPCS (n=12)
Skin redness/itchiness	0	0	0	0	0	0	0	0
Mild Headache	0	0	0	0	0	0	0	0
Dizziness	1	0	0	0	0	0	0	0
Scalp Pain	3	0	0	0	0	0	0	0
Neck Pain	0	0	0	0	0	0	0	0
Moderate and Severe Adverse Events	Week 1		Week 2		Week 3		Week 4	
	Active-tPCS (n=18)	Sham-tPCS (n=12)	Active-tPCS (n=18)	Sham-tPCS (n=12)	Active-tPCS (n=18)	Sham-tPCS (n=12)	Active-tPCS (n=18)	Sham-tPCS (n=12)
Nausea / Vomiting	nil	nil	nil	nil	nil	nil	nil	nil
Scalp burns	nil	nil	nil	nil	nil	nil	nil	nil
Seizures	nil	nil	nil	nil	nil	nil	nil	nil
Severe Headache	nil	nil	nil	nil	nil	nil	nil	nil

Adverse Events (AE) were collated across all participants who were recruited and entered the trial.

Subjects that experienced adverse events were only recorded as "1" if they had not been recorded in the previous week to avoid duplication

An AE is classified as:

- "Mild" , if they are self-resolved and/or did not require further medical action.
- "Moderate" , if they require medical intervention.
- "Serious", if it results in death, is life-threatening, requires inpatient hospitalization or prolongation of existing hospitalization or results in persistent or significant disability/incapacity.

eTable 2b: Between-Group Comparison of Adverse Events

Adverse event	tPCS group (N=18) n (%)	Sham group (N=12) n (%)	P value ¹
Week 1 — any symptoms	4 (22.2)	0 (0.0)	0.13
Week 2 — any symptoms	0 (0.0)	0 (0.0)	1.00
Week 3 — any symptoms	0 (0.0)	0 (0.0)	1.00
Week 4 — any symptoms	0 (0.0)	0 (0.0)	1.00
Scalp pain	3 (16.7)	0 (0.0)	0.26
Dizziness	1 (5.6)	0 (0.0)	1.00
Overall adverse events	4 (22.2)	0 (0.0)	0.13
¹ P values were calculated using Fisher's exact test due to small cell counts.			

eTable 3: Bonferroni Corrections for post-treatment between group Rank ANCOVA in UPDRS

Outcome Variable	P value ¹	Sig?	Bonferroni Threshold	Sig?
UPDRS_Total	0.011*	Yes	0.05 / 4 = 0.0125	Yes
UPDRS_NonMotor (I)	0.020*	No	0.05 / 4 = 0.0125	No
UPDRS_Motor (II)	0.140	No	0.05 / 4 = 0.0125	No
UPDRS_Motor (III)	0.356	No	0.05 / 4 = 0.0125	No

eTable 4: De-identified Individual Participant Data for the Per-Protocol Population (n = 30)

	Grp	Sex	AGE	Edu	MMSE	Modified H&Y		PDQ-39 SI		UPDRS_ NonMotor		UPDRS_ Motor (II)		UPDRS_ Motor (III)		UPDRS Total		NMSS Total		HAMD		Parkinsons Fatigue Scale		TUGT		Berg Balance	
Active 1, Sham 0						T0	T1	T0	T1	T0	T1	T0	T1	T0	T1	T0	T1	T0	T1	T0	T1	T0	T1	T0	T1	T0	T1
NGH0003	1	M	56	9	30	1.5	1.5	15	2	3	0	6	1	7	2	16	3	0	0	5	1	16	30	8.11	9.05	56	56
NGH0009	1	M	67	6	29	2.5	2	77	23	20	14	18	15	21	6	59	35	58	38	27	10	66	56	10.99	9.19	51	56
NGH0015	1	F	76	0	25	2.5	2.5	36	7	15	2	13	11	38	29	66	42	32	16	9	6	70	32	21.03	14.04	49	49
NGH0016	1	M	59	9	29	2	2	8	2	14	4	8	4	18	14	40	22	50	14	10	2	57	59	9.73	8.87	54	59
NGH0019	1	F	68	0	24	2.5	2	38	19	11	11	15	16	43	28	69	55	29	12	3	3	32	35	20.25	12.55	46	50
NGH0022	1	F	67	12	25	1	1	30	15	17	13	8	6	6	4	31	23	51	27	18	6	54	36	10.1	8.57	56	55
NGH0023	1	M	69	9	29	2	2	27	15	12	7	14	11	31	14	57	32	29	16	3	6	64	37	10.2	13.21	54	54
NGH0024	1	M	88	15	27	3	2	31	19	12	4	8	4	24	15	44	23	40	14	13	7	28	31	11.29	15.54	56	55
NGH0025	1	F	57	9	29	1.5	1	3	3	7	4	7	6	17	8	31	18	11	13	6	9	32	37	10.47	8.9	56	56
NGH0027	1	F	55	12	27	1.5	1.5	59	59	29	22	11	17	36	29	76	68	71	67	32	26	48	45	16.64	15.47	53	48
NGH0028	1	M	83	9	27	2	1	1	1	0	0	4	9	10	4	14	13	0	0	2	1	31	27	16.06	15.88	49	52
NGH0029	1	M	65	9	25	1.5	1.5	26	6	3	0	7	6	8	4	18	10	13	0	4	2	33	31	9.4	6.48	55	56
NGH0031	1	M	61	16	30	1.5	1.5	5	3	1	1	6	5	11	11	18	17	2	4	2	4	30	35	10.91	10.85	55	56
NGH0033	1	M	54	12	30	1	1	12	2	9	2	8	0	10	0	27	2	22	10	6	5	46	37	12.84	10.14	55	56
NGH0034	1	F	67	6	26	4	4	30	14	1	2	14	16	47	47	62	65	9	6	2	2	27	31	14.67	14.02	47	50
NGH0035	1	F	68	9	30	1	1	3	2	0	1	2	2	3	4	5	7	0	0	2	2	24	25	7.86	7.47	56	56
NGH0040	1	F	64	12	30	1	1	15	5	9	2	7	3	19	6	35	11	10	2	5	4	19	28	9.64	8.43	56	55
NGH0042	1	M	74	9	29	2	2	11	11	8	6	9	2	9	7	26	15	26	23	7	7	35	29	8.94	8.54	55	56
NGH0010	0	M	66	15	29	2.5	1.5	14	5	6	6	5	3	15	11	26	20	17	16	7	4	42	49	10.45	10.09	54	55
NGH0014	0	M	68	9	30	3	3	30	20	11	4	8	11	14	14	33	29	34	18	3	2	73	51	15.97	29.03	46	44
NGH0017	0	M	69	6	28	2	2	16	11	7	7	12	11	15	3	34	21	56	30	9	2	34	28	10.02	8.68	56	55

NGH0018	0	M	57	16	30	2	2	11	20	6	6	2	8	17	4	25	18	11	18	1	6	33	66	8.6	9.03	54	56
NGH0020	0	M	66	15	28	2	1	1	2	3	0	8	6	12	9	23	15	2	4	1	1	36	36	11.72	9.26	56	56
NGH0021	0	M	69	12	28	3	3	26	24	1	6	17	16	46	30	64	52	19	19	1	3	32	58	13.23	11.89	50	55
NGH0026	0	F	55	9	30	1.5	1	23	12	7	4	3	4	6	5	16	13	13	12	10	4	40	34	10.06	9	55	51
NGH0030	0	F	51	6	25	1.5	1	13	5	4	3	9	8	21	8	34	19	19	6	5	6	36	42	10.38	10.09	55	56
NGH0036	0	F	58	9	26	2.5	2.5	4	9	3	4	1	1	3	0	7	5	8	7	5	2	26	24	7.76	7.19	56	56
NGH0038	0	M	62	12	29	2.5	2	40	10	4	6	13	9	11	10	28	25	15	20	7	5	25	27	9.38	8.36	55	55
NGH0039	0	M	57	16	29	1	1	13	13	3	1	4	4	9	10	16	15	5	3	2	2	17	27	8.81	7.81	56	56
NGH0043	0	M	71	12	29	2.5	2.5	8	13	3	4	10	12	18	15	31	31	16	16	5	6	48	44	20.71	16.79	52	50