

Supplementary Material

Table S1. Classification accuracies (in %) $\pm$ standard error (SE) estimated with five-fold cross-validation for each participant for the motor imagery vs. idle state classes in the sit-to-stand and stand-to-sit offline experiments. Bold and * represents non-statistically significant differences between the means of the Overall and Overall random distributions ($p > 0.05$, 1,000 random permutations).

Participant ID	Sit-to-stand					Stand-to-sit				
	MotorImageryA	IdleStateA	Overall A	Overall A random	p-value	MotorImageryB	IdleStateB	Overall B	Overall B random	p-value
P01	98.39	98.59	98.49	49.72	0.0002	98.82	97.67	98.25	50.03	0.0002
P02	96.51	89.53	93.02	49.97	0.0005	79.76	77.65	78.70	49.88	0.0021
P03	55.81	60.23	58.02	49.90	0.1731*	60.67	60.00	60.34	50.09	0.0949*
P04	94.38	92.50	93.44	49.99	0.0004	86.36	84.27	85.32	8.32	0.0015
P05	95.56	91.76	93.66	50.11	0.0004	92.05	90.80	91.43	49.82	0.0005
P06	89.77	87.78	88.78	49.86	0.0006	90.00	87.36	88.68	50.13	0.0007
P07	83.72	89.77	86.75	49.93	0.0007	82.95	82.95	82.95	49.93	0.0013
P08	85.06	79.78	82.42	49.72	0.0017	82.22	78.89	80.56	50.00	0.0018
P09	93.26	97.75	95.51	50.00	0.0003	97.65	98.84	98.24	50.14	0.0003
P10	97.78	96.05	96.92	49.78	0.0003	83.72	86.05	84.88	49.82	0.0009
P11	92.05	82.56	87.30	50.14	0.0008	94.32	95.24	94.78	49.63	0.0003
P12	80.90	84.27	82.58	49.72	0.0035	72.73	74.44	73.59	50.05	0.0079
P13	81.82	68.54	75.18	49.92	0.0036	55.56	57.47	56.51	50.14	0.2422*
P14	92.86	85.37	89.11	49.90	0.0009	85.88	93.10	89.49	50.23	0.0007
P15	82.22	88.76	85.49	49.82	0.0012	77.53	82.95	80.24	50.03	0.0041
P16	95.56	100.00	97.78	49.97	0.0003	95.40	100.00	97.70	49.98	0.0003
P17	86.21	93.02	89.62	49.91	0.0005	88.24	90.28	89.26	50.07	0.0005
P18	83.72	90.80	87.26	50.21	0.0018	74.39	73.56	73.98	49.95	0.0170
P19	90.36	79.07	84.72	49.94	0.0010	78.21	87.50	82.85	49.93	0.0012
P20	87.50	89.33	88.42	49.77	0.0006	98.85	100.00	99.43	49.93	0.0002
P21	76.47	74.39	75.43	49.79	0.0039	77.11	86.52	81.81	50.13	0.0016
P22	91.67	89.02	90.35	50.01	0.0006	87.78	92.05	89.91	50.15	0.0010
P23	96.59	93.33	94.96	49.74	0.0003	76.40	67.42	71.91	50.16	0.0110
P24	87.78	87.64	87.71	49.85	0.0008	87.78	88.89	88.33	49.73	0.0006
P25	97.65	94.19	95.92	50.04	0.0003	100.00	98.89	99.44	50.32	0.0002
P26	94.81	92.22	93.51	49.73	0.0003	92.05	90.91	91.48	49.93	0.0005
P27	88.64	94.32	91.48	50.19	0.0005	92.05	88.76	90.40	49.82	0.0005
P28	85.06	78.82	81.94	49.68	0.0016	85.56	93.26	89.41	50.01	0.0006
P29	95.24	96.63	95.93	49.94	0.0003	96.59	92.05	94.32	49.84	0.0004
P30	87.78	84.09	85.93	50.02	0.0009	79.07	78.41	78.74	50.19	0.0022
P31	98.84	89.66	94.25	49.52	0.0004	87.36	81.93	84.64	50.01	0.0011
P32	90.80	90.00	90.40	49.92	0.0006	82.56	81.11	81.83	50.17	0.0020
Mean	89.21	87.81	88.51	49.90	0.0063	84.99	85.60	85.29	50.01	0.0125
$\pm$ SE	± 1.49	± 1.53	± 1.43	± 0.03	± 0.0054	± 1.84	± 1.90	± 1.83	± 0.03	± 0.0080

Table S2. Sensitivity (or TPR), precision (or PPV), specificity (or TNR), and negative predictive value (NPV) in percentage $\pm$ standard error (SE) obtained for each participant in the sit-to-stand and stand-to-sit online experiments.

Participant ID	Sit-to-stand				Stand-to-sit			
	Sensitivity	Precision	Specificity	NPV	Sensitivity	Precision	Specificity	NPV
P01	46.67	100.00	100.00	65.22	93.33	93.33	93.33	93.33
P02	100.00	100.00	100.00	100.00	93.33	87.50	86.67	92.86
P03	86.67	100.00	100.00	88.24	100.00	75.00	66.67	100.00
P04	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
P05	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
P06	100.00	100.00	100.00	100.00	100.00	93.75	93.33	100.00
P07	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
P08	100.00	93.75	93.33	100.00	100.00	88.24	86.67	100.00
P09	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
P10	80.00	100.00	100.00	83.33	93.33	100.00	100.00	93.75
P11	80.00	100.00	100.00	83.33	100.00	100.00	100.00	100.00
P12	100.00	93.75	93.33	100.00	100.00	100.00	100.00	100.00
P13	66.67	100.00	100.00	75.00	86.67	100.00	100.00	88.24
P14	86.67	92.86	93.33	87.50	86.67	86.67	86.67	86.67
P15	100.00	100.00	100.00	100.00	86.67	100.00	100.00	88.24
P16	66.67	100.00	100.00	75.00	100.00	100.00	100.00	100.00
P17	100.00	100.00	100.00	100.00	100.00	93.75	93.33	100.00
P18	66.67	100.00	100.00	75.00	93.33	87.50	86.67	92.86
P19	80.00	100.00	100.00	83.33	93.33	93.33	93.33	93.33
P20	100.00	93.75	93.33	100.00	100.00	100.00	100.00	100.00
P21	93.33	100.00	100.00	93.75	100.00	100.00	100.00	100.00
P22	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
P23	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
P24	100.00	71.43	60.00	100.00	100.00	100.00	100.00	100.00
P25	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
P26	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
P27	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
P28	86.67	92.86	93.33	87.50	100.00	100.00	100.00	100.00
P29	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
P30	100.00	100.00	100.00	100.00	86.67	92.86	93.33	87.50
P31	100.00	100.00	100.00	100.00	86.67	100.00	100.00	88.24
P32	93.33	100.00	100.00	93.75	100.00	100.00	100.00	100.00
Mean	91.67	98.07	97.71	93.47	96.88	96.62	96.25	97.03
$\pm$ SE	$\pm$ 2.41	$\pm$ 0.96	$\pm$ 1.29	$\pm$ 1.76	$\pm$ 0.90	$\pm$ 1.06	$\pm$ 1.27	$\pm$ 0.84

Table S3. Box plots of the online accuracy, task detection time, and ITR values $\pm$ standard error (SE) of the BCI online experiments for each participant.

Participant ID	Accuracy (%)		Average detection time (s)		ITR (bit/min)	
	Sit-to-stand	Stand-to-sit	Sit-to-stand	Stand-to-sit	Sit-to-stand	Stand-to-sit
P01	73.33	93.33	3.81	6.90	2.57	5.62
P02	100.00	90.00	4.17	5.74	14.39	5.55
P03	93.33	83.33	6.15	5.12	6.31	4.10
P04	100.00	100.00	4.67	5.25	12.84	11.42
P05	100.00	100.00	4.67	4.03	12.84	14.90
P06	100.00	96.67	5.11	3.88	11.74	12.21
P07	100.00	100.00	5.56	3.74	10.79	16.06
P08	96.67	93.33	5.53	4.26	8.57	9.10
P09	100.00	100.00	4.42	4.10	13.57	14.65
P10	90.00	96.67	4.70	5.32	6.78	8.90
P11	90.00	100.00	5.54	5.27	5.75	11.38
P12	96.67	100.00	4.33	4.46	10.93	13.45
P13	83.33	93.33	5.39	6.90	3.89	5.62
P14	90.00	86.67	5.83	5.86	5.47	4.44
P15	100.00	93.33	5.25	4.63	11.43	8.38
P16	83.33	100.00	4.06	3.86	5.18	15.54
P17	100.00	96.67	5.14	5.11	11.68	9.27
P18	83.33	90.00	4.72	6.56	4.44	4.86
P19	90.00	93.33	4.50	5.34	7.08	7.26
P20	96.67	100.00	4.93	4.05	9.60	14.82
P21	96.67	100.00	5.14	4.53	9.20	13.23
P22	100.00	100.00	4.72	4.47	12.71	13.43
P23	100.00	100.00	3.77	4.26	15.92	14.08
P24	80.00	100.00	4.84	4.29	3.45	13.98
P25	100.00	100.00	3.84	3.60	15.61	16.68
P26	100.00	100.00	4.32	4.04	13.88	14.85
P27	100.00	100.00	3.75	4.06	16.02	14.77
P28	90.00	100.00	4.81	3.89	6.62	15.42
P29	100.00	100.00	3.82	3.62	15.70	16.58
P30	100.00	90.00	4.46	5.58	13.46	5.71
P31	100.00	93.33	4.03	4.50	14.88	8.62
P32	96.67	100.00	4.44	5.39	10.67	11.13
Mean	94.69	96.56	4.70	4.77	10.12	11.13
$\pm$ SE	± 1.29	± 0.83	± 0.11	± 0.16	± 0.73	± 0.72