

## Supplementary Material

S1 Table. Statistics for one-way simulation ANOVAs on accuracy threshold

Simulation	Stimulation Condition			
	<i>F</i>	<i>df</i>	<i>p</i>	$\eta_p^2$
Base model	1.597	2, 38	0.216	0.078
Total mean input firing rates=40Hz	2.039	2, 38	0.144	0.097
Total mean input firing rates=120Hz	7.885	2, 38	0.001	0.293
Update frequency=30Hz	11.121	2, 38	<0.001	0.369
Update frequency=120Hz	6.314	2, 38	0.004	0.249
tDCS of pyramidal cells only	5.676	2, 38	0.007	0.230

S2 Table. Statistics for two-way simulation ANOVAs on decision time

Simulation	Stimulation Condition					Coherence					Stimulation Condition × Coherence				
	<i>F</i>	<i>df</i>	<i>p</i>	$\eta_p^2$	$\varepsilon$	<i>F</i>	<i>df</i>	<i>p</i>	$\eta_p^2$	$\varepsilon$	<i>F</i>	<i>df</i>	<i>p</i>	$\eta_p^2$	$\varepsilon$
Base model	136.264	2, 38	<0.001	0.878		354.571	2.792, 53.044	<0.001	0.949	0.465	6.702	6.176, 117.346	<0.001	0.261	0.515
Total mean input firing rates=40Hz	158.063	1.351, 25.676	<0.001	0.893	0.676	185.935	2.431, 46.185	<0.001	0.907	0.405	6.834	6.453, 122.603	<0.001	0.265	0.538
Total mean input firing rates=120Hz	78.561	2, 38	<0.001	0.805		311.128	3.157, 59.989	<0.001	0.942	0.526	6.861	5.756, 109.360	<0.001	0.265	0.480
Update frequency=30Hz	118.621	2, 38	<0.001	0.862		307.404	3.409, 64.778	<0.001	0.942	0.568	6.013	6.001, 114.017	<0.001	0.240	0.500
Update frequency=120Hz	128.579	2, 38	<0.001	0.871		372.423	2.853, 54.207	<0.001	0.951	0.476	7.704	6.509, 123.679	<0.001	0.289	0.542
tDCS of pyramidal cells only	65.290	2, 38	<0.001	0.775		312.197	2.912, 55.331	<0.001	0.943	0.485	2.002	5.527, 105.017	0.077	0.095	0.461

S3 Table. Statistics for two-way simulation ANOVAs on decision time difference

Simulation	Stimulation Condition					Coherence					Stimulation Condition × Coherence				
	<i>F</i>	<i>df</i>	<i>P</i>	$\eta_p^2$	$\varepsilon$	<i>F</i>	<i>df</i>	<i>p</i>	$\eta_p^2$	$\varepsilon$	<i>F</i>	<i>df</i>	<i>p</i>	$\eta_p^2$	$\varepsilon$
Base model	276.864	1, 19	<0.001	0.936		0.437	2.457, 46.674	0.689	0.022	0.409	49.526	2.607, 49.526	<0.001	0.722	0.434
Total mean input firing rates=40Hz	182.088	1, 19	<0.001	0.906		0.285	1.944, 36.927	0.747	0.015	0.324	28.765	2.441, 46.395	<0.001	0.602	0.407
Total mean input firing rates=120Hz	164.270	1, 19	<0.001	0.896		0.266	2.668, 50.698	0.827	0.014	0.445	40.003	2.076, 39.443	<0.001	0.678	0.346
Update frequency=30Hz	232.766	1, 19	<0.001	0.925		0.785	2.662, 50.579	0.494	0.040	0.444	44.330	2.881, 54.730	<0.001	0.700	0.480
Update frequency=120Hz	412.874	1, 19	<0.001	0.956		1.307	2.734, 51.946	0.379	0.052	0.456	42.764	1.738, 33.019	<0.001	0.692	0.290
tDCS of pyramidal cells only	121.998	1, 19	<0.001	0.865		2.381	2.605, 49.502	0.089	0.111	0.434	10.586	2.548, 48.413	<0.001	0.358	0.425

S4 Table. Statistics for one-way simulation ANOVAs on pre-stimulus bias

Simulation	Stimulation Condition			
	<i>F</i>	<i>df</i>	<i>p</i>	$\eta_p^2$
Base model	77.174	2, 38	<0.001	0.802
Total mean input firing rates=40Hz	79.851	2, 38	<0.001	0.808
Total mean input firing rates=120Hz	111.214	2, 38	<0.001	0.854
Update frequency=30Hz	108.569	2, 38	<0.001	0.851
Update frequency=120Hz	84.059	2, 38	<0.001	0.816
tDCS of pyramidal cells only	37,064	2, 38	<0.001	0.661

S5 Table. Statistics for one-way simulation ANOVAs on pre-stimulus bias – choice percentage steepness

	Stimulation Condition				
Simulation	<i>F</i>	<i>df</i>	<i>p</i>	$\eta_p^2$	$\varepsilon$
Base model	1.129	2, 38	0.334	0.056	
Total mean input firing rates=40Hz	0.596	2, 38	0.556	0.030	
Total mean input firing rates=120Hz	1.848	2, 38	0.171	0.089	
Update frequency=30Hz	0.778	1.477, 28.054	0.433	0.039	0.738
Update frequency=120Hz	2.534	1.267, 24.071	0.118	0.118	0.633
tDCS of pyramidal cells only	1.400	1.443, 27.409	0.258	0.069	0.721

S6 Table. Statistics for one-way simulation ANOVAs on pre-stimulus bias – decision time slope and offset

Simulation	Slope: Stimulation Condition					Offset: Stimulation Condition			
	<i>F</i>	<i>df</i>	<i>p</i>	$\eta_p^2$	$\varepsilon$	<i>F</i>	<i>df</i>	<i>p</i>	$\eta_p^2$
Base model	1.050	1.497, 28.442	0.344	0.052	0.748	9.012	2, 38	0.001	0.322
Total mean input firing rates=40Hz	1.335	1.417, 26.915	0.272	0.066	0.708	39.596	2, 38	<0.001	0.676
Total mean input firing rates=120Hz	0.320	1.332, 25.307	0.640	0.017	0.666	14.307	2, 38	<0.001	0.430
Update frequency=30Hz	2.303	1.154, 21.926	0.141	0.108	0.577	7.507	2, 38	0.002	0.283
Update frequency=120Hz	1.394	1.291, 24.534	0.258	0.068	0.646	12.803	2, 38	<0.001	0.403
tDCS of pyramidal cells only	2.421	1.084, 20.593	0.133	0.113	0.542	6.268	2, 38	0.004	0.248