**SUPPLEMENTARY MATERIALS:**

**Supplementary Table 1.** Used TMS intensities, estimated RTs and mean number of valid trials averaged per condition and participant. (MSO refers to maximums stimulator output).

| Participant | TMS intensities (%MSO) | | | | RTs (ms) | Valid Trials / condition |
|---|---|---|---|---|---|---|
| | RMT | $1mV_{REST}$ | $1mV_{WS}$ | $1mV_{200ms}$ | | |
| 1 | 59 | 79 | 79 | 87 | 220 | 16 |
| 2 | 68 | 79 | 79 | 81 | 264 | 17 |
| 3 | 54 | 60 | 57 | 63 | 240 | 14 |
| 4 | 55 | 78 | 86 | 90 | 215 | 17 |
| 5 | 55 | 70 | 60 | 70 | 211 | 17 |
| 6 | 60 | 80 | 88 | 92 | 227 | 12 |
| 7 | 48 | 60 | 54 | 60 | 230 | 17 |
| 8 | 66 | 89 | 98 | 100 | 205 | 16 |
| 9 | 55 | 70 | 60 | 60 | 196 | 14 |
| 10 | 37 | 55 | 52 | 52 | 226 | 17 |
| 11 | 62 | 78 | 75 | 77 | 207 | 17 |
| 12 | 42 | 66 | 59 | 59 | 198 | 15 |
| 13 | 48 | 63 | 54 | 60 | 215 | 16 |
| 14 | 48 | 61 | 58 | 58 | 238 | 15 |
| 15 | 42 | 52 | 50 | 50 | 205 | 16 |
| 16 | 50 | 58 | 61 | 61 | 239 | 14 |
| 17 | 57 | 80 | 80 | 80 | 218 | 16 |
| 18 | 69 | 78 | 80 | 82 | 204 | 17 |
| 19 | 80 | 100 | 100 | 100 | 214 | 13 |
| 20 | 35 | 42 | 40 | 40 | 230 | 15 |
| 21 | 47 | 58 | 56 | 53 | 210 | 15 |
| 22 | 44 | 52 | 55 | 54 | 207 | 17 |
| 23 | 55 | 62 | 63 | 63 | 257 | 15 |
| 24 | 40 | 48 | 55 | 72 | 243 | 13 |
| Mean ± SEM | 53 ± 2 | 67 ± 3 | 67 ± 3 | 69 ± 3 | 222 ± 4 | 15 ± 1 |

**Supplementary Table 2.** MEP amplitudes to 1mV TMS and pre-stimulus EMG levels.

| Subj. | 1mV TMS responses (mV) | | | Pre-TMS EMG noise (mV) | | |
|---|---|---|---|---|---|---|
| | *Rest* | *WS* | *RT-200* | *Rest* | *WS* | *RT-200* |
| 1 | 0.55 | 1.72 | 1.41 | 0.02 | 0.02 | 0.02 |
| 2 | 1.03 | 1.08 | 0.92 | 0.03 | 0.03 | 0.03 |
| 3 | 0.77 | 1.06 | 1.27 | 0.03 | 0.03 | 0.03 |
| 4 | 0.81 | 0.78 | 0.70 | 0.01 | 0.02 | 0.02 |
| 5 | 0.81 | 0.98 | 1.08 | 0.01 | 0.02 | 0.02 |
| 6 | 0.53 | 1.01 | 0.75 | 0.06 | 0.05 | 0.05 |
| 7 | 0.94 | 1.26 | 1.74 | 0.03 | 0.02 | 0.02 |
| 8 | 0.56 | 1.32 | 1.14 | 0.02 | 0.03 | 0.03 |
| 9 | 1.26 | 0.62 | 0.75 | 0.02 | 0.02 | 0.02 |
| 10 | 0.60 | 0.98 | 0.96 | 0.01 | 0.02 | 0.02 |
| 11 | 0.56 | 1.29 | 2.00 | 0.02 | 0.02 | 0.02 |
| 12 | 1.23 | 0.66 | 0.58 | 0.01 | 0.02 | 0.02 |
| 13 | 1.73 | 0.51 | 0.80 | 0.02 | 0.03 | 0.03 |
| 14 | 0.78 | 1.02 | 0.81 | 0.02 | 0.02 | 0.02 |
| 15 | 1.35 | 1.03 | 1.78 | 0.02 | 0.02 | 0.02 |
| 16 | 1.20 | 2.04 | 1.35 | 0.03 | 0.07 | 0.07 |
| 17 | 1.03 | 0.81 | 0.91 | 0.02 | 0.03 | 0.03 |
| 18 | 0.80 | 1.23 | 1.22 | 0.02 | 0.02 | 0.02 |
| 19 | 0.34 | 0.42 | 0.46 | 0.02 | 0.02 | 0.02 |
| 20 | 1.35 | 1.45 | 1.38 | 0.02 | 0.03 | 0.03 |
| 21 | 1.16 | 1.18 | 0.76 | 0.02 | 0.03 | 0.04 |
| 22 | 0.97 | 0.84 | 0.74 | 0.02 | 0.03 | 0.03 |
| 23 | 0.95 | 0.78 | 0.76 | 0.02 | 0.03 | 0.03 |
| 24 | 1.10 | 1.42 | 2.32 | 0.02 | 0.05 | 0.05 |
| Mean ± SEM | 0.93 ± 0.07 | 1.06 ± 0.08 | 1.11 ± 0.10 | 0.02 ± 0.00 | 0.03 ± 0.00 | 0.03 ± 0.00 |

**Supplementary Table 3.** Paired comparisons of SICI values obtained at *Rest*, *WS* and *RT-200* for the different CS used and for $SICI_{MAX}$ and $SICI_{MAXREST}$.

| CS-intensity (%RMT) | Paired comparisons (p-values) | | |
|---|---|---|---|
| | *Rest* v *WS* | *Rest* v *RT-200* | *WS* v *RT-200* |
| 60 | 0.063 | 0.163 | 0.415 |
| 70 | 0.356 | 0.214 | 0.750 |
| 80 | **0.002** | **0.030** | 0.067 |
| 90 | **0.009** | **0.018** | 0.089 |
| 100 | **0.001** | **0.000** | 0.858 |
| $SICI_{MAX}$ | **0.000** | **0.006** | 0.216 |
| $SICI_{MAXREST}$ | 0.535 | 0.081 | **0.025** |