**Supplementary File 1**

**Tuning of motor outputs produced by spinal stimulation during voluntary control of torque directions in monkeys**

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**Table 1. Summary of collected muscular conditions**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Stim. site | Monkey H |  | Monkey W |  | Total |
| <150 μA | 150-750 μA | 750-1350 μA | ≥1350 μA |  | <150 μA | 150-750 μA | 750-1350 μA | ≥1350 μA |  |
| 1 | 16 | 64 | 48 | 0 |  | 64 | 16 | 0 | 0 |  | 208 |
| 2 | 0 | 16 | 0 | 0 |  | 32 | 16 | 0 | 0 |  | 64 |
| 3 | 0 | 48 | 48 | 0 |  | 16 | 48 | 16 | 16 |  | 192 |
| 4 | 32 | 32 | 0 | 0 |  | 32 | 48 | 32 | 0 |  | 192 |
| 5 | 16 | 48 | 16 | 0 |  | 48 | 0 | 0 | 0 |  | 128 |
| 6 | 16 | 16 | 48 | 0 |  | 0 | 48 | 0 | 0 |  | 128 |
| 7 | 16 | 16 | 48 | 16 |  |  |  | 96 |
| Total | 96 | 240 | 208 | 16 |  | 156 | 156 | 48 | 16 |  | 1008 |

**Table 2. Summary of collected experiments and trials**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Stim. site | Monkey H |  | Monkey W |  | Total experiments(min-max trials) |
| <150 μA | 150-750μA | 750-1350μA | ≥1350 μA |  | <150 μA | 150-750 μA | 750-1350μA | ≥1350 μA |  |  |
| 1 | 1(872) | 4(250-303) | 3(255-279) | 0(0) |  | 4(102-251) | 1(112) | 0(0) | 0(0) |  | 13(102-872) |
| 2 | 0(0) | 1(321) | 0(0) | 0(0) |  | 2(209-226) | 1(113) | 0(0) | 0(0) |  | 4(113-321) |
| 3 | 0(0) | 3(105-248) | 3(129-301) | 0(0) |  | 1(299) | 3(103-400) | 1(200) | 1(101) |  | 12(101-400) |
| 4 | 2(125-867) | 2(294-307) | 0(0) | 0(0) |  | 2(245-246) | 4(194-228) | 2(79-166) | 0(0) |  | 12(79-867) |
| 5 | 1(810) | 3(180-300) | 1(304) | 0(0) |  | 3(63-212) | 0(0) | 0(0) | 0(0) |  | 8(63-810) |
| 6 | 1(592) | 1(266) | 3(248-279) | 0(0) |  | 0(0) | 3(204-248) | 0(0) | 0(0) |  | 8(204-592) |
| 7 | 1(1004) | 1(251) | 3(261-395) | 1(74) |  |  |  | 6(74-1004) |
| Total experiments(min-max trials) | 6(125-1004) | 15(105-321) | 13(129-395) | 1(74) |  | 12(63-299) | 12(103-400) | 3(79-200) | 1(101) |  | 63(63-1004) |