**Supplementary file 1:** **Supplementary Tables 1A through 1I**

**Supplementary file 1. Table 1A.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Sleep | Wake | P value |
| #Subjects | 47 | 45 |  |
| Gender | 40 F | 39 F |  |
| Age | 23.43 (2.38) | 23.42 (2.37) | 0.29 |
| BMI | 20.64 (2.06) | 20.38 (2.19) | 0.07 |
| Pre-stimulation hunger | 3.93 (1.48) | 4.16 (1.72) | 0.51 |
| Post-stimulation hunger | 4.79 (1.96) | 5.66 (1.72) | 0.03 |
| Pre-stimulation vigilance | 3.79 (1.08) | 3.80 (1.42) | 0.96 |
| Post-stimulation vigilance | 2.21 (1.10) | 2.76 (1.68) | 0.07 |
| Hunger (post-pre) | 0.83 (2.22) | 1.50 (1.98) | 0.13 |
| Vigilance (post-pre) | -1.57 (1.47) | -1.04 (1.97) | 0.14 |

**Supplementary file 1. Table 1B.**

|  |  |  |  |
| --- | --- | --- | --- |
| 士力架 | Snickers | 彩虹糖 | Skittles |
| 德芙巧克力 | Dove chocolate | **百奇** | Pocky |
| MM花生豆 | M&M Peanut | **奥利奥** | Oreos |
| 趣多多 | Chips ahoy | **乐事经典** | Lays classic |
| 乐天饼 | Lotte biscuits | **上好佳薯片** | Oishi |
| 好时巧克力 | Hershey chocolate | **旺旺雪饼** | WantWant crackers |
| 盼盼面包 | Pan-Pan bread | **小熊饼干** | Teddy crackers |
| 奇多妙脆角 | Cheetos bugles | **雀巢脆脆鲨** | Nestle wafer |
| 阿尔卑斯糖 | Alpenliebe candy | **金帝巧克力** | Leconte chocolate |
| 旺仔牛奶糖 | Hot-kid’s nougat | **百力滋** | Pretz |
| 亲亲虾条 | Qinqin prawn cracker | **康师傅饼干** | Masterkong biscuits |
| 品客薯片 | Pringles potato chips | **可比克** | Copico |
| 达利园面包 | Dali bread | **好丽友派** | Orion pie |
| 提拉米苏 | Tiramisù | **百醇** | Pejoy |
| 费列罗巧克力 | Ferrero chocolate | **泡芙** | Puff |
| 太平苏打饼 | Pacific soda cake | **MM巧克力豆** | Chocolate MM |
| 沙琪玛 | Caramel treats | **多利多兹** | Doritos |
| 米老头 | Uncle pop | **蔓越莓饼** | Cranberry cookies |
| Q蒂 | Qute | **港荣蛋糕** | Kongweng cake |
| 妙芙蛋糕 | Muffin cake | **小浣熊面** | Small raccoon noodle |
| 金丝猴糖 | Goldenmonkey candy | **大白兔糖** | White rabbit candy |
| 奇趣蛋 | Kinder joy | **奇巧** | KitKat |
| 杏仁巧克力 | Almond chocolate | **乐之饼干** | Ritz biscuits |
| 焙朗饼干 | Belvita biscuits | **波力卷** | Bonny roll |
| 麦吉士爆米花 | Mage’s popcorn | **瑞士莲** | Lindt chocolate |
| 蘑菇力 | Moguli chocolate | **老奶奶花生米** | Grandma peanut |
| 康师傅苏打饼 | Masterkong soda cake | **小王子雪饼** | Little prince rice cake |
| 黄飞红花生米 | Huangfeihong peanut | **达利园派** | Daliyuan pie |
| 华夫饼 | Waffle | **燕麦糖** | Oatmeal candy |
| 苹果派 | Apple pie | **瑞士卷** | Swiss roll |

**Supplementary file 1. Table 1C.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | ΔWTPcued - ΔWTPuncued | | % choosing cued item | |
| Variable | β | P value | β | P value |
| Intercept | 0.4975 | 0.6678 | 0.7583 | 0.0016\*\* |
| Treatment (sleep =1) | 0.3946 | 0.0095\*\* | 0.0707 | 0.0206\* |
| Vigilance (post − pre) | - 0.0639 | 0.1470 | - 0.0062 | 0.4832 |
| Hunger (post – pre) | 0.0640 | 0.0774 | 0.0071 | 0.3329 |
| Familiarity | 0.0487 | 0.3604 | 0.0128 | 0.2346 |
| BMI | - 0.0237 | 0.5339 | - 0.0064 | 0.4011 |
| Age | - 0.0078 | 0.8053 | - 0.0071 | 0.2469 |
| Gender (Male = 1) | 0.1394 | 0.5541 | 0.0708 | 0.1384 |
| R2 | 0.1418 | | 0.1362 | |
| # Observations | 92 | | 92 | |

**Supplementary file 1. Table 1D.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Sleep group  (PSG only) | Sleep group  (PSG & ERP) | P value |
| #Subjects | 24 | 23 |  |
| Sleep latency | 11.25 (1.64) | 10.04 (1.27) | 0.56 |
| N1 | 14.06 (1.92) | 12.93 (1.94) | 0.68 |
| N2 | 31.90 (2.77) | 33.17 (2.84) | 0.75 |
| N3 | 18.63 (2.54) | 19.54 (3.14) | 0.82 |
| REM | 7.00 (1.88) | 4.89 (1.62) | 0.40 |
| Total sleep time | 71.58 (4.10) | 70.54 (3.43) | 0.85 |

**Supplementary file 1. Table 1E.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Sleep group  (PSG only) | Sleep group  (PSG & ERP) | P value |
| #Subjects | 24 | 23 |  |
| ∆WTPcued-∆WTPuncued | 0.560 (0.135) | 0.582 (0.133) | 0.91 |
| WTP1cued-WTP1uncued | 0.018 (0.025) | 0.000 (0.018) | 0.56 |
| WTP2cued-WTP2uncued | 0.578 (0.130) | 0.581 (0.132) | 0.99 |
| % choosing cued items | 60.42 (1.67) | 58.42 (2.82) | 0.54 |

**Supplementary file 1. Table 1F.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | KC + | | | KC - | | |
| Electrodes | Mean | SD | P value | Mean | SD | P value |
| F3 | 3.5066 | 4.6899 | 0.0099\*\*\* | -6.3904 | 4.3861 | 0.0000\*\*\* |
| F4 | 3.1662 | 3.9324 | 0.0051\*\* | -5.7372 | 4.2025 | 0.0000\*\*\* |
| C3 | 2.4462 | 3.1824 | 0.0078\*\* | -4.3022 | 2.9252 | 0.0000\*\*\* |
| C4 | 2.3274 | 3.1161 | 0.0010\*\* | -4.1318 | 3.0989 | 0.0000\*\*\* |
| O1 | -0.0864 | 0.7868 | 1 | -0.3093 | 0.8755 | 0.6258 |
| O2 | 0.1819 | 0.6736 | 1 | -0.7591 | 1.2755 | 0.0554 |

**Supplementary file 1. Table 1G.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Across subjects | | Across cued items | |
|  | r | P value | r | P value |
| α [8-12Hz] | 0.3589 | 0.4632 | 0.2928 | 0.2290 |
| β [12-30Hz] | 0.2465 | 1 | 0.2011 | 0.8765 |
| θ [4-8Hz] | 0.6409 | 0.0049\*\* | 0.4667 | 0.0047\*\* |
| δ [0-4Hz] | 0.6527 | 0.0037\*\* | 0.5160 | 0.0010\*\* |
| γ[30-35Hz] | -0.0197 | 1 | -0.0230 | 1 |
| # Observations | 23 | | 47 | |

**Supplementary file 1. Table 1H.**

|  |  |  |
| --- | --- | --- |
| Parameter | Level | Prior |
| Mean drift rates for cued | individual | *kcued ~ Uniform (0, B)* |
| Mean drift rates for uncued | individual | *kuncued ~ Uniform (0, B)* |
| Starting-point variability | individual | *A* ~ 12 ×*Beta* (αA, βA) |
| Decision threshold | individual | *b* ~ 5×*beta* (αd, βd) + A |
| Non-decision time | individual | *NDT* ~ *Beta* (αNDT, βNDT) |
| B | group | *B ~ Normal (5, 0.5)* |
| αd | group | αd ~ *Uniform* (1, 5) |
| αA | group | αA ~ *Uniform* (1, 5) |
| αNDT | group | αNDT ~ *Uniform* (1, 5) |
| βd | group | βd ~ *Uniform* (1, 5) |
| βA | group | βA ~ *Uniform* (1, 5) |
| β𝜏 | group | β𝜏 ~ *Uniform* (1, 5) |

**Supplementary file 1. Table 1I.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Simulated RT distributions** | | | | **Actual RT distributions** | | | |
| **Percentile** | **Cued**  **High** | **Cued**  **Low** | **Uncued**  **High** | **Uncued**  **Low** | **Cued**  **High** | **Cued**  **Low** | **Uncued**  **High** | **Uncued**  **Low** |
| 10% | 1.10 | 1.18 | 1.11 | 1.17 | 1.13 | 1.21 | 1.10 | 1.16 |
| 30% | 1.38 | 1.48 | 1.35 | 1.47 | 1.36 | 1.52 | 1.33 | 1.45 |
| 50% | 1.65 | 1.77 | 1.60 | 1.77 | 1.66 | 1.76 | 1.62 | 1.79 |
| 70% | 1.97 | 2.13 | 1.91 | 2.13 | 1.94 | 2.21 | 1.89 | 2.15 |
| 90% | 2.54 | 2.77 | 2.50 | 2.77 | 2.88 | 2.89 | 2.24 | 2.90 |