

Table S1. Characteristics of included studies

| Study | Design | | | Participants | | | | | | Nap | Time between nap and test | Test of cognitive performance | | Quality of articles | | | | |
|---------------------|------------|------------|----------------------|----------------------|-------------|-----------|----------------------|-------------|-----------|----------|---|-------------------------------|---|--|------|----------|-----------|----------|
| | Cross-over | Randomized | Environment | Nap | | | Control | | | | | Duration min | Time hours | t1 min | Name | Function | CONSORT % | STROBE % |
| | | | | n | Age mean±SD | Sex % men | n | Age mean±SD | Sex % men | | | | | | | | | |
| Abdessalem 2019 | no | yes | Laboratory | - | 21±3 | - | - | 21±3 | - | 25 | 13:00-13:25 14:00-14:25 15:00-15:25 | 80 140 200 | Digit cancellation task | Alertness | - | 53.1 | | |
| Amin 2012 | no | no | Real work Laboratory | 18 | 29±1.9 | 61 | 11 | 30±1.4 | 55 | 20 | 13:15-13:35 | 25 | EEG recording CPT II | Alertness Cognitive performance Alertness | - | 50 | | |
| Asaoka 2010 | yes | no | Laboratory | 8 | 24±1.1 | 75 | 8 | 24±1.1 | 75 | 60 | 14:00-15:00 | 1,5 | AOT | Alertness Cognitive performance | - | 46.9 | | |
| Bauckhaus 2006 | no | yes | Laboratory | 17 | 20.3±0.4 | - | 17 | 20.3±0.4 | - | 60 | 14:45-15:45 | 15 | PAL MTT TAP DSB | Memory Cognitive performance Alertness Memory | 40 | - | | |
| Backhaus 2016 | no | yes | Laboratory | 2 groups : 22 and 20 | 70.4±6.1 | 45.2 | 21 | 73.9±4.5 | 14.3 | 45 or 90 | 12:50-13:35 12:50-14:20 | 35, and 60 80, and 105 | VLMT MAT | Memory | 45.7 | - | | |
| Christy 2015 | no | no | Laboratory | - | - | - | - | - | - | 60 | - | - | SUPA ROCFT Maze learning task | Memory Cognitive performance Cognitive performance | - | 50 | | |
| Debarnot 2011 | no | yes | Laboratory | 2 groups : 11 and 10 | 26±4.4 | - | 2 groups : 6 and 8 | 26±4.4 | - | 20 or 90 | 14:00-14:20 14:00-15:30 | 30 100 | Sequential finger-tapping task | Memory | 31.4 | - | | |
| Hayashi 1999 | yes | no | Laboratory | 7 | 20.6 | 43 | 7 | 20.6 | 43 | 20 | 14:00-14:20 | 40, 100, and 160 | Logical reasoning Addition Visual detection Auditory vigilance | Cognitive performance | - | 37.5 | | |
| Hayashi 1999 | yes | no | Laboratory | 10 | 20.7 | - | 10 | 20.7 | - | 20 | 12:20-12:40 | 20, 80, 140, 200, and 260 | Logical reasoning Addition Visual detection Auditory vigilance | Cognitive performance | - | 50 | | |
| Lahl 2008 | yes | no | Laboratory | 2 groups : 25 and 14 | 24.4 | - | 2 groups : 25 and 14 | 24.4 | - | 6 or 50 | 13:30-13:36 13:30-14:20 | 10 54 | Memory task | Memory | - | 37.5 | | |
| Lau 2010 | no | yes | Laboratory | 14 | 21.2±1.1 | 50 | 17 | 21.21±1.1 | 41 | 90 | 13:00-14:30 | 125 | Direct associative memory | Memory | 40 | - | | |
| Lau 2011 | no | no | Laboratory | 2 groups : 15 and 11 | 18.98 | 30.8 | 2 groups : 14 and 11 | 18.98 | 32 | 90 | 12:00-13:30 | 30 | Cued recall task Multiple-choice task Radical task | Memory | - | 34.4 | | |
| Milner 2006 | no | yes | Laboratory | 18 | 20.2±2.27 | - | 17 | 20.2±2.27 | - | 20 | 14:40-15:00 | 30 50 | Ball and cup test Auditory oddball task | Alertness | 57.1 | - | | |
| Takahashi 2004 | yes | no | Laboratory | 8 | 49 | - | 8 | 49 | - | 15 | 12:30-12:45 | 30, 135 and 135 | Choice reaction time Alertness scale | Alertness | - | 40.6 | | |
| Tucker 2006 | no | no | Laboratory | 12 | 20.1 | 50 | 17 | 20.1 | 41 | 60 | 13:00-14:00 | 240 | Paired associates task MTT DSB | Memory Cognitive performance Memory | - | 34.4 | | |
| Tucker 2008 | no | no | Laboratory | 16 | 23.3 | - | 17 | 23.3 | - | 60 | 13:00-14:00 | 125 | SUPA Maze learning task | Memory Cognitive performance | - | 37.5 | | |
| Van Schalkwijk 2017 | no | yes | Laboratory | 2 groups : 18 and 17 | 23.3±2.4 | 52.6 | 2 groups : 22 and 19 | 23.3±2.4 | 52.6 | 90 | 14:00-15:30 | 65 | WPT MTT | Memory Cognitive performance | 42.9 | - | | |

AOT, Arrow orientation task; CPT II, Conner's Continuous Performance Test Version 5; DSB, Digit span backwards task; EEG, Electroencephalographic; MAT, Motor adaptation task; MTT, Mirror Tracing Task; PAL, Paired associates learning; ROCFT, Rey–Osterrieth complex figure test; SUPA, Semantically unrelated paired associates; TAP, Test of Attentional Performance; VLMT, Verbal learning and memory test; WPT, Word-pair task. **Studies in bold:** studies included in meta-analysis.