

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	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	Maze learning task 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.