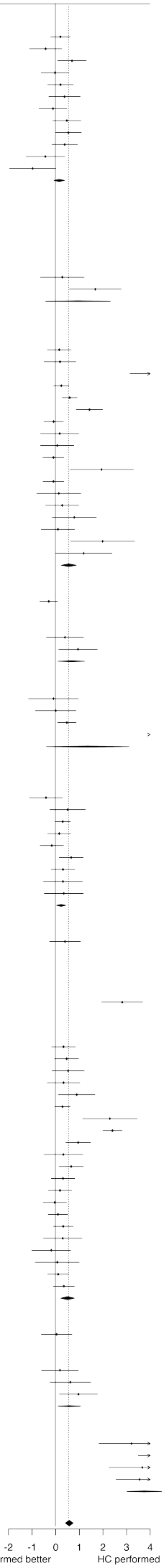
MEMORY FUNCTIONING

Study	Std. Mean Difference IV, Random, 95% CI
Short-term memory	
Sleep-related breathing disorders	
O Brien 2004 Ped (PS)	0.20 [-0.21; 0.61]
Beebe 2004 (PS)	-0.43 [-1.11; 0.25]
Lau 2015 (OSA)	0.69 [0.09; 1.29]
Lau 2015 (OSA)	-0.03 [-0.61; 0.56]
Friedman 2003 (OSA)	0.20 [-0.34; 0.74]
Hannon 2012 (OSA and obesity)	0.37 [-0.29; 1.03]
Lau 2015 (OSA)	-0.12 [-0.70; 0.47]
Lau 2015 (OSA)	0.47 [-0.12; 1.06]
Friedman 2003 (OSA)	0.54 [-0.01; 1.09]
Friedman 2003 (OSA)	0.38 [-0.16; 0.92]
Beebe 2004 (MS OSA)	-0.44 [-1.26; 0.38]
Beebe 2004 (Severe OA)	-0.98 [-1.95; 0.00]
Total (95% CI)	**0.15 [-0.08; 0.37]**
Insomnia disorders	-
Central disorders of hypersomnolence	-
Sleep-related neurological disorders	
Baglietto 2001 (Epilepsy)	0.28 [-0.65; 1.21]
Baglietto 2001 (Epilepsy)	1.67 [0.58; 2.77]
Total (95% CI)	**0.94 [-0.42; 2.31]**
Long-term memory: immediate recall	
Sleep-related breathing disorders	
Beebe 2010 (PS)	0.15 [-0.35; 0.65]
Beebe 2004 (PS)	0.18 [-0.49; 0.86]
Blunden 2000 (PS/OSA)	4.48 [3.15; 5.81]
Kaemingk 2003 (SBD)	0.24 [-0.09; 0.56]
Kurnatowski 2006 (OSA)	0.59 [0.27; 0.91]
Kurnatowski 2006 (OSA)	1.43 [0.88; 1.98]
Beebe 2010 (Mild OSA)	-0.09 [-0.50; 0.32]
Beebe 2004 (Mild OSA)	0.17 [-0.64; 0.98]
Tan 2014 (Mild and MS OSA)	0.06 [-0.64; 0.77]
Beebe 2010 (MS OSA)	-0.10 [-0.54; 0.35]
Rhodes 1995 (MS OSA)	1.94 [0.59; 3.29]
Beebe 2010 (MS OSA)	-0.10 [-0.54; 0.35]
Beebe 2004 (MS OSA)	0.13 [-0.80; 1.06]
Tan 2014 (Mild and MS OSA)	0.27 [-0.44; 0.98]
Yuan 2012 (MS OSA)	0.79 [-0.15; 1.72]
Tan 2014 (Mild and MS OSA)	0.09 [-0.61; 0.80]
Rhodes 1995 (MS OSA)	1.99 [0.63; 3.34]
Rhodes 1995 (MS OSA)	1.18 [-0.01; 2.38]
Total (95% CI)	**0.55 [0.23; 0.87]**
Insomnia disorders	
Sawyer 2009 (Sleep fragmentation)	-0.29 [-0.67; 0.08]
Central disorders of hypersomnolence	
Gagnon 2023 (Narcolepsy)	0.39 [-0.39; 1.18]
Gagnon 2023 (Narcolepsy)	0.94 [0.13; 1.76]
Total (95% CI)	**0.66 [0.09; 1.22]**
Sleep-related neurological disorders	
Urbain 2011 (Epilepsy)	-0.10 [-1.15; 0.96]
Galer 2015 (Epilepsy)	0.00 [-0.86; 0.86]
Sawyer 2009 (ADHD and sleep problems)	0.47 [0.08; 0.87]
Maski 2015 (ASD)	5.35 [4.03; 6.67]
Total (95% CI)	**1.35 [-0.39; 3.10]**
Long-term memory: learning of consecutive trials	
Sleep-related breathing disorders	
Blunden 2005 (PS)	-0.41 [-1.11; 0.28]
Blunden 2005 (PS and BSP)	0.50 [-0.25; 1.26]
Kaemingk 2003 (SBD)	0.30 [-0.03; 0.62]
Giordani 2012 (OSA)	0.15 [-0.34; 0.64]
Giordani 2012 (OSA)	-0.17 [-0.66; 0.33]
Giordani 2012 (OSA)	0.65 [0.15; 1.16]
Giordani 2012 (OSA)	0.31 [-0.19; 0.81]
Cha 2017 (MS OSA)	0.31 [-0.52; 1.13]
Cha 2017 (MS OSA)	0.34 [-0.48; 1.17]
Total (95% CI)	**0.23 [0.03; 0.42]**
Insomnia disorders	
Blunden 2005 (BSP)	0.39 [-0.26; 1.05]
Central disorders of hypersomnolence	-
Sleep-related neurological disorders	
Maski 2015 (ASD)*	2.82 [1.95; 3.68]
Long-term memory: delayed recall	
Sleep-related breathing disorders	
Beebe 2010 (PS)	0.33 [-0.18; 0.83]
Beebe 2010 (PS)	0.46 [-0.05; 0.97]
Beebe 2004 (PS)	0.52 [-0.16; 1.21]
Blunden 2005 (PS)	0.33 [-0.36; 1.02]
Blunden 2005 (PS and BSP)	0.89 [0.12; 1.66]
Kaemingk 2003 (SBD)	0.28 [-0.04; 0.61]
Csábi 2013 (SBD)	2.29 [1.14; 3.45]
Kurnatowski 2006 (OSA)	2.40 [1.99; 2.81]
Kurnatowski 2006 (OSA)	0.95 [0.43; 1.47]
Cha 2017 (MS OSA)	0.32 [-0.50; 1.15]
Giordani 2012 (OSA)	0.65 [0.15; 1.16]
Giordani 2012 (OSA)	0.31 [-0.19; 0.81]
Giordani 2012 (OSA)	0.18 [-0.32; 0.67]
Giordani 2012 (OSA)	-0.04 [-0.53; 0.46]
Beebe 2010 (Mild OSA)	0.09 [-0.32; 0.51]
Beebe 2010 (Mild OSA)	0.32 [-0.10; 0.73]
Beebe 2004 (Mild OSA)	0.30 [-0.52; 1.11]
Cha 2017 (MS OSA)	-0.19 [-1.01; 0.63]
Beebe 2004 (MS OSA)	0.07 [-0.87; 1.00]
Beebe 2010 (MS OSA)	0.11 [-0.34; 0.55]
Beebe 2010 (MS OSA)	0.34 [-0.10; 0.79]
Total (95% CI)	**0.50 [0.21; 0.79]**
Insomnia disorders	
Blunden 2005 (BSP)	0.04 [-0.61; 0.69]
Central disorders of hypersomnolence	
Gagnon 2023 (Narcolepsy)	0.18 [-0.60; 0.96]
Gagnon 2023 (Narcolepsy)	0.62 [-0.24; 1.48]
Gagnon 2023 (Narcolepsy)	0.96 [0.16; 1.77]
Total (95% CI)	**0.58 [0.11; 1.05]**
Sleep-related neurological disorders	
Urbain 2011 (Epilepsy)	3.21 [1.83; 4.58]
Galer 2015 (Epilepsy)	5.33 [3.50; 7.17]
Galer 2015 (Epilepsy)	3.67 [2.26; 5.07]
Maski 2015 (ASD)	3.55 [2.56; 4.53]
Total (95% CI)	**3.75 [3.02; 4.48]**
Total (95% CI)	**0.57 [0.41; 0.74]**

Heterogeneity: Tau^2 = 0.4; Chi^2 = 455.15, df = 78 (P < 0.001); I^2 = 83%

Test for subgroup differences: Chi^2 = 137.14, df = 12 (P < 0.001)