

Abstract O15 Table 1 Patient demographic and clinical/sleep history

Is there more to understand about circadian rhythm sleep wake disorders (CRSWDs) in young adults with autistic spectrum conditions (ASC) referred to Myalgic Encephalopathy/Chronic Fatigue Syndrome (ME/CFS) services? A case report.

Age at referral	19 Years
Ethnicity	Caucasian
Gender	Male
Sleep History	1 year history of sleeping a lot with no specific pattern; pattern can vary; no difficulties prior to this; no identified triggers
Relevant Medical History	Diagnosed with ASC aged 10 years; no features of depression
Blood Test Results	Normal
Medication	Vitamin D, Daridorexant
Reason for Referral to BCFS	Suspected ME/CFS

suggest the prevalence may be higher in individuals with ASC due to reduced melatonin production and the role that melatonin is thought to play in circadian rhythm maintenance.

There may be overlap between ME/CFS and CRSWDs (Jackson & Bruck 2012). Education in sleep medicine may help accurately identify causes of disrupted circadian rhythm, providing opportunity for appropriate diagnosis. Collaborative working across fatigue and sleep services, could optimise skills and resources to improve individual's ability to engage in meaningful occupations and positively influence quality of life.

O16

DOES OVERNIGHT MEMORY CONSOLIDATION PREPARE THE BRAIN FOR NEXT-DAY LEARNING?

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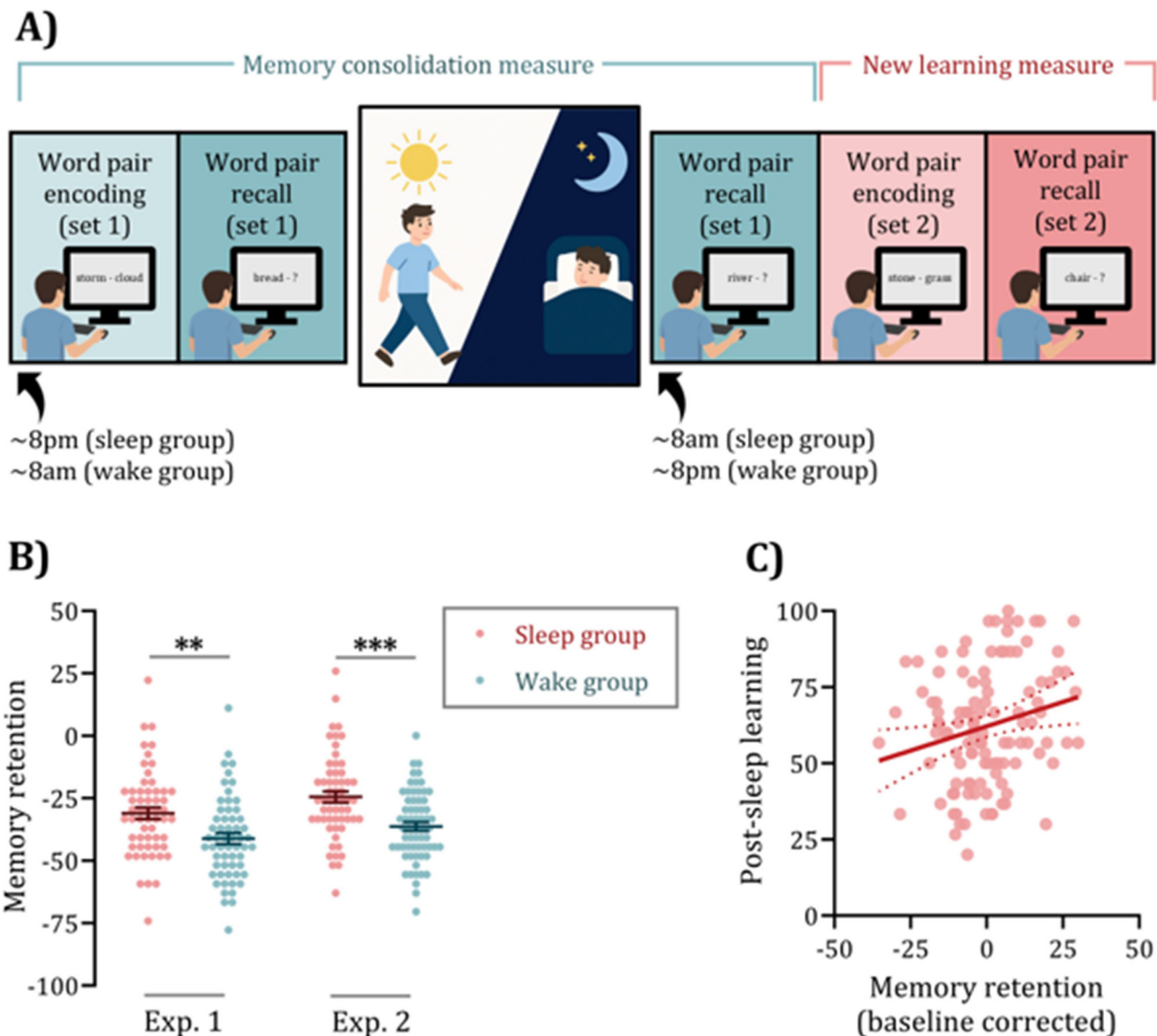
Introduction Sleep supports memory consolidation and next-day learning. The Active Systems Consolidation (ASC) model proposes that sleep facilitates a shift in retrieval-dependency from the hippocampus to the neocortex, promoting the integration of recent experiences into long-term storage and restoring the hippocampus's capacity to encode new information the following day. We tested the hypothesis that greater overnight

consolidation is associated with superior next-day learning of hippocampus-dependent memories.

Methods In two preregistered online experiments, participants completed two sessions separated by a 12-h delay of either overnight sleep (sleep group) or daytime wakefulness (wake group; combined dataset: n=238, age=23.44±3.51 years). In both experiments, participants first encoded a set of word pairs and completed a cued recall test both before and after the delay, providing a behavioural index of memory consolidation. Participants next learned a new set of word pairs and were immediately tested on them, allowing us to assess next-day learning performance (figure 1A).

Results Memory retention was significantly greater following sleep than wakefulness (Exp 1: $t=3.19$, $p=.002$, $d=0.60$; Exp 2: $t=4.26$, $p<.001$, $d=0.77$; figure 1B), consistent with sleep's role in supporting memory consolidation. However, there was no sleep-related learning advantage for word pairs encoded after the delay, and no significant relationship was observed between overnight retention and next-day learning in our preregistered analyses (all $p>.05$). In an exploratory analysis combining both experiments and statistically controlling for baseline learning, greater retention was associated with better subsequent learning in the sleep group ($r=.22$, $p=.020$; figure 1C), but not the wake group ($r=.13$, $p=.16$).

Discussion Our results suggest that sleep facilitates memory consolidation, but offer limited support for the idea that overnight consolidation directly facilitates next-day learning. The exploratory evidence that a relationship may exist when baseline learning ability is accounted for warrants further research that equates initial encoding strength across participants.



Abstract O16 Figure 1 (A) Experimental procedure. In two similar experiments, participants encoded 60 word pairs and were tested on half of those pairs immediately after. Following a 12-h delay of either overnight sleep (sleep group) or daytime wakefulness (wake group), participants were tested on the other half of the word pairs. Next, participants learned 30 new word pairs and were then tested on all these new pairs immediately after. (B) Memory consolidation. In both experiments, word pair retention was greater across overnight sleep than daytime wakefulness. Data are shown as mean±SEM. Data points represent individual participants. **: $p < .01$; ***: $p < .001$. (C) The relationship between overnight memory consolidation and next-day learning. In an exploratory analysis combining data across experiments, greater overnight memory retention was associated with better next-day learning in the sleep group, after controlling for individual differences in baseline learning ability. Dotted areas represent 95% confidence intervals

O17

A SYSTEMATIC REVIEW OF THE EFFECTS OF SLEEP DURATION AND DAYTIME ALERTNESS ON COGNITIVE FUNCTION ACROSS THE ADULT LIFESPAN

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Introduction Both sleep and cognition undergo significant change throughout the adult lifespan (Scullin & Bliwise, 2015). Recent research indicates that sleep duration and daytime alertness are two key sleep parameters that are associated with

impaired cognitive functioning during ageing (Buysse, 2014). We systematically review the literature on relationships between these sleep parameters and cognitive functioning. Uniquely, we take a lifespan approach by considering effects in young, middle-aged, and older adults, across specific cognitive domains (i.e., processing speed, attention/executive function, visuospatial ability, working memory, long-term memory/learning, language, & global cognition).

Methods Included studies must have reported at least one measure of sleep duration and/or daytime alertness and at least one measure of cognition. Study samples must have included healthy human adults aged 18 or above. The databases searched were APA PsychInfo, CINAHL, Cochrane Central, Medline,