

Habitual Fluid Intake Does Not Affect Sleep Parameters in Young Women

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ABSTRACT

Sleep is essential for optimal physical performance, cognitive function, recovery, and overall health. Similarly, hydration status has been shown to influence physical and cognitive functions. Dehydration can lead to impaired cognition and possibly impaired sleep. However, the effect of habitual total water intake (TWI) on sleep and recovery measures have not been examined. **PURPOSE:** To examine the effect of TWI on sleep and recovery measures in young women. **METHODS:** Twenty-two young women (age: 22.8±4.6 yrs; body mass: 60.0±9.5 kg; height: 164.6±6.1 cm) collected fluid intake and food consumption information across a 5 day period, and average TWI was calculated based on them. Then, participants were categorized in either High Drinker (HD; ≥ 2.5L/day; n=13; age: 23.0±3.6 yrs) or Low Drinker (LD; ≤ 1.6 L/day; n=9; age: 23±3yrs). Sleep and recovery measures were collected using a wearable sleep-tracking device that participants wore for 5 consecutive days. Sleep and recovery measures were compared between HD and LD, using a two-tailed independent t-test and effect sizes (ES). ES were identified as either small (0.2-0.49), medium (0.5-0.79), and large (>0.8). **RESULTS:** No significant differences were found in resting heart rate (HD: 63.7±4.6 bpm, LD: 61.9± 5.2 bpm; *p*=0.40), heart rate variability (HD: 58.2±14.1 ms, 69.6±40.9 ms; *p*=0.44), slow wave sleep (SWS) (HD: 1.5±0.4 hrs, LD: 1.4±0.3 hrs; *p*=0.55), SWS percentage (HD: 19.3±3.8 %, LD: 18.7±3.7 %; *p*=0.17) sleep consistency (HD: 65.2±15.6 %, LD: 63.3±7.3%; *p*=0.71), and sleep efficiency (HD: 90.5±3.1 %, LD: 90.4±2.0 %; *p*=0.91). While there were no statistical differences, rapid eye movement (REM) sleep (HD: 2.0±0.4 hrs, LD: 1.6±0.7 hrs; *p*=0.17) and REM percentage (HD: 26.1±3.8 %, LD: 21.5±7.8 %; *p*=0.13) displayed the largest differences, with REM indicating a medium ES (*d*=0.70) and REM percentage having a large ES (*d*=0.80). **CONCLUSION:** Habitual fluid intake might not impact sleep measurement. However, based on ES, REM sleep and REM percentage potentially display a trend. Still, more research is necessary to further determine any correlations.