than gist-level contextual and spatial, respectively, information only (ps<.01). At minutes 15 and 30 during exercise below the VT, accuracy was higher for gist-than surface level temporal and emotional, respectively, information only (ps < .05).
CONCLUSIONS: These results indicate that exercise intensity, particularly at and below at VT, influence communication performance in a nuanced manner depending on the information level and type.

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Sleep, Caffeine, And Exercise: The Relationship Between Behavior And Cognition

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(No relevant relationships reported)

Sleep hygiene, caffeine consumption, and exercise behavior vary widely among young adults. Modest variations may affect learning and capability. A greater understanding of the interaction between these behaviors and cognition is warranted.
PURPOSE: To investigate the relationship between daily caffeine intake, sleep duration, and participation in aerobic exercise (AE) and resistance training (RT) on cognition in young adults.
METHODS: We screened recreationally active men (n=13) and women (n=16). All subjects were tested 3 times; each session was 3 days apart. Subjects wore sleep tracking devices that exported duration of sleep the night before testing. During each session, they documented recent caffeine consumption and participation in AE and RT. These served as independent variables. Subjects then completed the Human Benchmark test (HBT) to appraise reaction time, and the Psychology Today (PT) mental speed test, measuring efficiency of rapid information processing. Linear regressions evaluated the relationships between behavioral variables and test scores.
RESULTS: Subjects were 22.6 ± 7.8 years of age, 62% participated in AE, 69% participated in RT, and caffeine was consumed by 59%. Across all three dates, mean sleep duration was 423.4 ± 144.7 min, HBT score was 308.6 ± 89.6, and mean PT test percentage was 70.6 ± 17.2%. There were no significant associations during session 1. During session 2, participation in AE predicted an improvement of 50.0 points on the HBT (R^2=0.203; p=0.036; 95% CI of β: 3.733, 96.284). During session 3, subjects reported less sleep (384.0 ± 121.7 min); the difference was not significant (p=0.098). Sleep had an inverse association with HBT score (R^2=0.306; p=0.009; 95% CI of β: -0.324, -0.052). Additionally, AE had an inverse association with the PT test percentage (R^2=0.471; p<0.001; 95% CI of β: -38.191, -11.919). There were no associations with resistance training or caffeine consumption on either cognitive test.
CONCLUSION: Sleep duration and aerobic exercise affect psychological performance. In this analysis, resistance training and caffeine consumption did not. The small sample delimits thorough evaluation; however, as educational environments continue to change, furthering our understanding of these interactions can guide behaviors to favor learning.

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Prolonged Smartphone Usage Duration With/without Physical Inactivity Is Not Associated With Cognitive Decline In University Students

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Recently, a meta-analysis highlighted that the duration of screen time has increased among young populations. Moreover, some review articles mentioned the concept of 'digital dementia' that prolonged screen time would increase the risk of dementia even in young individuals. However, little is known whether long screen time duration contributes to cognitive decline in young adults. Given that a longer screen time causes physical inactivity which is one of the factors for cognitive decline, it is possible that the duration of smartphone usage is associated with cognitive impairment.
PURPOSE: We aimed to examine the relationships between screen time with/without removing the impact of physical activity and cognitive function in university students.
METHODS: Sixty-three healthy adults took part in the present study (Male *n* = 37, Female *n* = 26; Age 22 ± 2 yrs). The average daily duration of screen time was determined from smartphone recording data for three weeks. The International physical activity questionnaire-short form assessed the level of physical activity. Some cognitive functions were measured using Montreal cognitive assessment, Grooved pegboard test (dominant and non-dominant hand), Digit symbol substitution test, Color-word Stroop test (congruent, neutral, and incongruent task), Memory recognition test, and *n*-back test (1 and 2). A one-tailed Spearman's rank correlation validated the relationship between screen time duration and physical activity. Pearson's and partial correlation analyses (*i.e.*, without and with removing the effects of physical activity) were conducted to determine whether the duration of smartphone screen time is associated with cognitive functions.
RESULTS: There was a weak correlation between a longer duration of screen time and physical inactivity (ρ = -0.24, P < 0.05). However, both Pearson's and partial correlation analyses demonstrated no significant relationship between screen time duration and all cognitive functions.
CONCLUSION: Prolonged smartphone usage duration may be one of the factors for physical inactivity among young populations. However, the results of the present study indicate that cognitive decline was not observed in university students who use smartphones for a long duration with/without physical inactivity.

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The Experimental Effects Of Acute Exercise Duration On Episodic Memory

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PURPOSE: The catecholamine hypothesis posits that elevated levels of noradrenaline, from high-intensity acute exercise, should enhance episodic memory performance. In support of this theory, past work demonstrates that high-intensity acute exercise improves episodic memory (e.g., Winter et al., 2007; Loprinzi et al., 2023). This theory also predicts that longer duration (i.e., > 30 minutes) moderate-intensity acute exercise will elevate noradrenaline and, consequently, improve episodic memory. The present experiment aimed to test this prediction by evaluating if, compared to a non-exercise control and shorter duration (20-min) moderate-intensity exercise, longer duration (40-min) moderate-intensity acute exercise would be optimal in improving episodic memory.
METHODS: Twenty-three participants (M_{age} = 19.7 years) at the University of Mississippi completed a fully-crossed, counterbalanced, within-subject study design. Participants completed four primary conditions, including two non-exercise control conditions (20- and 40-min of rest) and two exercise conditions (20- and 40-min of