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Micro-Rest: Extremely Short Breaks in Post-Learning Interference Support Memory Retention over the Long Term

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Abstract : The distraction of attentional resources after learning hinders long-term memory consolidation compared to several minutes of post-encoding inactivity in form of wakeful resting. We tested whether an 8-minute period of wakeful resting, compared to performing an adapted version of the d2 test of attention after learning, supports memory retention. Participants encoded and immediately recalled a word list followed by either an 8 minute period of wakeful resting (eyes closed, relaxed) or by performing an adapted version of the d2 test of attention (scanning and selecting specific characters while ignoring others). At the end of the experimental session (after 12-24 min) and again after 7 days, participants were required to complete a surprise free recall test of both word lists. Our results showed no significant difference in memory retention between the experimental conditions. However, we found that participants who completed the first lines of the d2 test in less than the given time limit of 20 seconds and thus had short unfilled intervals before switching to the next test line, remembered more words over the 12-24 minute and over the 7 days retention interval than participants who did not complete the first lines. This interaction occurred only for the first test lines, with the highest temporal proximity to the encoding task and not for later test lines. Differences in retention scores between groups (completed first line vs. did not complete) seem to be widely independent of the general performance in the d2 test. Implications and limitations of these exploratory findings are discussed.

Keywords : long-term memory, retroactive interference, attention, forgetting
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