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Prospective Memory: The Relation of Executive Function to Aging

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The executive functions of the frontal lobe seem to play an integral role in the mediation of prospective memory, as suggested by recent studies (Shallice & Burgess, 1991; Cockburn, 1995; Shapiro, Shapiro, Alper, & Russell, in press). Prospective memory requires the recall of an intention for performing a specific action in the future. The process of remembering to take medication epitomizes this construct; for many people (for instance, individuals with heart problems) taking medication is woven into their daily routines. Yet failure to remember to take medicine can often lead to serious medical complications, particularly for older adults. Research into the exact aspects of prospective memory failure in older adults has been inconclusive. The present study compared older adults (ages 65-80) and younger adults (ages 18-21) across four prospective memory tasks and tests of executive functioning. Both groups received each of four prospective memory tasks (an event-based, disembedded task; an event-based, embedded task; a time-based, disembedded task; and a time-based, embedded task) webbed within a general knowledge quiz. The participants also received the Stroop Test, the Wisconsin Card Sort Task, the Williams Inhibition Test, and an Immediate Recall Test, which have been acknowledged as measures of executive and frontal lobe functioning. Analyses were run to ascertain the exact aspects of memory failure and whether this failure was related to deficits in executive functioning.