

Phonemic Switching in Single and Dual Task Environments

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Deficits in the frontal lobes are the first and earliest signs of cognitive aging. Older adults activate the frontal regions in the brain that are not active in younger adults for performance on the same tasks. Verbal fluency is just one way to test cognitive functioning, with both phonemic (letters) and semantic (categories) fluencies used for testing. More specifically in dual task research, different age, education, and various cognitive abilities such as working memory, selective attention, episodic memory, executive control, and speed and information processing, while also engaging in the motor task of walking have provided various results based on the population sample. In this study we examine the difference between semantic fluency clusters and switching in both single task and dual task environments with accounting for several covariates. Seventeen healthy older adults aged 71 ± 5.1 years and living independently in the community took part in this study. Females accounted for 65% of the sample and 35% male, with an age range of 15 years ($M = 71, SD = 5.1$). During the fluency tasks subject were either given a letter (phonemic) or a category (semantic) and told to name as many words as possible that belong in these groups. They had one minute for each letter or category and performed this three times for a total of three minutes. They were instructed not to repeat words, use synonyms or proper nouns. Subjects were scored on the total number of words per session. The single task phonemic switching score was a significant predictor in dual task phonemic switching score, $B = .735, t(22) = 3.24, p = .005, 95\%$, such that higher single task phonemic switching scores predicted higher dual task phonemic switching scores.