

## Musical Training Enhances Verbal Fluency in Older Adults (60-85)

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Age-related cognitive decline is a common problem for older adults. Most cognitive training programs focus on unimodal training tasks (such as grocery lists) which engage few cognitive processing systems (Anschutz et al., 1985). Musical training has the capacity to engage multiple learning and memory domains. Prior research suggests that musical training may enhance other cognitive abilities such as verbal memory in young children (Chan et al. 1998, Ho et al., 2003) and planning abilities in older adults (Bugos et al., 2007). While much is known about the effects of music instruction on verbal performance in children, little is known regarding the effects of musical training on verbal fluency in older adults. We examined the effects of musical training in group piano instruction and music listening instruction on verbal fluency in older adults (ages 60-85). This project is part of a long-term research program to examine the effects of music instructional programs modeled as cognitive training programs to mitigate age-related cognitive decline in healthy seniors.

Seventy participants were recruited for research participation. Criteria for study enrollment consisted of being between the ages of 60-85, native English speakers, no history of colorblindness, no prior history of neurological impairment such as stroke or dementia, no difficulty with the movement of their hands, less than three years of prior musical training, and not currently engaged in music reading or musical performance. Participants were matched for age, education, and intelligence to two training groups: music listening instruction and group piano instruction. Participants completed a battery of neurological and cognitive assessments pre and post-music instruction. The battery of assessments consisted of two pre-testing sessions and two post-testing sessions. Each session lasted two hours. All testing was conducted individually in a quiet testing room at the local senior center.

Participants received weekly classes for sixteen weeks in music listening instruction and group piano instruction. Music listening instruction taught as a music appreciation course that incorporated both world music and music of the classical vernacular, based upon *Music Listening Today* (Hoffer, 2002). Group piano instruction included finger dexterity exercises, basic music theory, and standard piano literature from the Alfred Adult All in One Course (Palmer, Manus, & Lethco, 1995). Both regimens required participants to complete 30 minutes of daily practice or listening respectively. All practice was logged. Participants also self-reported their level of concentration and interest in the program.

Forty-seven participants (25 piano instruction group; 22 music listening group) completed the training and post-testing. Attrition was due to personal illness or family illness, a need to return to the workforce, or a lack of commitment to practice. Data analysis reveals that both groups enhanced their ability to generate words and switch between categories of words as measured by the Delis Kaplan Executive Function- Verbal Fluency subtest.