

### Applying Research to Real-Life Settings

#### Overview

This lab will demonstrate how you can use exercise science research and literature in an applied setting. In this lab, you will use studies on Alzheimer's disease to plan an exercise program for adults in an assisted living center.

*First, some background on Alzheimer's disease:*

Aging is often associated with declines of function in a variety of ways, both physical and mental. It has been estimated that 26.6 million individuals suffered from Alzheimer's disease (AD) in 2006, with this number expected to reach more than 100 million adults worldwide by 2050 (Brookmeyer, Johnson, Ziegler-Graham, & Arrighi, 2007). In the United States, 4.5 million adults suffer from AD, and it is estimated that up to 14 million will be diagnosed by 2030 (Yu & Kolanowski, 2009). Alzheimer's disease is a disease of progressive cognitive decline, often accompanied by disrupted function and neuropsychiatric symptoms, frequently evolving into dementia.

Obviously, determining whether regular physical activity can prevent or reduce the risk of developing AD is an important research endeavor. As the prospective studies have shown, involvement in regular physical activity is associated with a reduction in the risk for developing AD or dementia (Etgen et al., 2010; Larson et al., 2006). However, there is a need to individualize exercise programs for individuals who already have AD.

#### Equipment

- Access to research literature

#### Procedure

Imagine that you have been assigned to present an activity program to a residential care facility that specializes in caring for older adults with Alzheimer's disease and/or dementia. Your task is to develop an exercise program that can be used to assist the staff with helping the residents to begin and, you hope, stay with an exercise program. To do this successfully—that is, to convince the administration of the facility to begin the exercise program—do the following:

1. Examine the research literature and use the materials listed in the references and resources sections to find the best available information regarding the kind of exercise to use. This should include the type, frequency, intensity, and duration.
2. Search the literature to determine the most effective strategies that can be used with this population to motivate them to engage in the exercise program and, perhaps more important, to adhere to the program. After all, the benefits they may obtain from the exercise program will be apparent only if they stick with it.
3. Put your information together into a presentation that you can deliver to the care facility's administration.

### References

- Brookmeyer, R., Johnson, E., Ziegler-Graham, K., & Arrighi, H.M. (2007). Forecasting the global burden of Alzheimer's disease. *Alzheimers & Dementia*, 3, 186–191.
- Etgen, T., Sander, D., Huntgeburth, U., Poppert, H., Forstl, H., & Bickel, H. (2010). Physical activity and incident cognitive impairment in elderly persons: The INVADE Study. *Archives of Internal Medicine*, 170(2), 186–193.
- Larson, E.B., Wang, L., Bowen, J.D., McCormick, W.C., Teri, L., Crane, P., & Kukull, W. (2006). Exercise is associated with reduced risk for incident dementia among persons 65 years of age and older. *Annals of Internal Medicine*, 144(2), 73–81.
- Yu, F., & Kolanowski, A. (2009). Facilitating aerobic exercise training in older adults with Alzheimer's disease. *Geriatric Nursing*, 30, 250–259.

### Other Possible Resources

- Galik, E.M., Resnick, B., & Pretzer-Aboff, I. (2009). “Knowing what makes them tick”: Motivating cognitively impaired older adults to participate in restorative care. *International Journal of Nursing Practice*, 15, 48–55.
- Honea, R.A., Thomas, G.P., Harsha, A., Anderson, H.S., Donnelly, J.E., Brooks, W.M., & Burns, J.M. (2009). Cardiorespiratory fitness and preserved medial temporal lobe volume in Alzheimer disease. *Alzheimer Disease & Associated Disorders*, 23, 188–197.
- Yu, F., Kolanowski, A.M., Strumpf, N.E. & Eslinger, P.J. (2006). Improving cognition and function through exercise intervention in Alzheimer's disease. *Journal of Nursing Scholarship*, 38, 358–365.

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