ASP-American Heart Association Career Development Award in Geriatric Cardiology

2010 AWARDS

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Award Recipient:
Michael E. Widlansky, MD
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Project:
"Effect of a Combined Pedometer/Computerized Feedback Intervention on Vascular and Left Ventricle Function in Older Adults"

The American Heart Association (AHA) and the American College of Sports Medicine (ACSM) recommend older adults, 50-80 years old, perform at least 30 minutes of moderate-intensity aerobic exercise on most days (≥5 days) of the week. This suggestion arises, in part, from data supporting that regular physical activity reduces the risk of adverse cardiovascular events. A portion of these benefits may be from reductions in the incidence and severity of cardiovascular risk factors, including diabetes mellitus, obesity, and hypertension.

While this recommendation for physical activity has been in existence for almost 15 years, the rates of obesity in the United States continue to rise and the prevalence of sedenterism remains, at best, unchanged. Researchers have been engaged in investigating novel interventions designed to increase physical activity to reach the recommended activity targets. One promising intervention involves use of inexpensive, easy to use pedometers that allow individuals to objectively track the number of steps taken during a set period of time. Recent data suggest that an average of 10,000 steps per day, as measured by a pedometer, accurately estimates the activity levels recommended by AHA, ACSM, and US government public health guidelines.

While the benefits of habitual exercise are well-documented, there are no data that demonstrate current recommendations for moderate physical activity in older adults by the ACSM, AHA, and US public health guidelines reduce the risk of adverse cardiovascular events. Interestingly, prior work indicates that pedometer-centered interventions can increase physical activity, suggesting that this type of intervention could potentially lead to cardiovascular benefits. Using validated surrogate markers of cardiovascular risk, including brachial artery endothelial function, tonometric measurements of vascular stiffness, and measurements derived from transthoracic echocardiography, we will determine whether increasing the physical activity of sedentary adults to an average of 10,000 steps or more per day translates into improvements in cardiovascular health. This will be determined in the context of a randomized control trial employing a control group, a study group that uses a pedometer alone, and an intervention group that couples a pedometer with internet-based motivational messaging software, demonstrated in our preliminary data, to encourage older adults to reach and exceed the 10,000 steps per day goal.

My central career goal is to become an independent clinician researcher with a focus on the study of interventions to reduce cardiovascular risk in older adults. This grant application focuses on one of these method-encouraging moderate physical activities. Through support from the ASP-American Heart Association Career Development Award in Geriatric Cardiology, I will advance my knowledge of the genetic, physical, social, environmental, and psychological attributes that most affect traditional and novel markers of cardiovascular risk in older adults. This understanding of these factors will enable me to design and test novel interventions to reduce cardiovascular risk in older adults, which in turn, will facilitate the development of community-based implementation strategies to help promote successful interventions.