NIH Award from the National Heart, Lung, and Blood Institute

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- Project: Sleep and Cardiovascular Health
- Start Date: June 1, 2009
- Total Award Amount: $16,582

How the results of this project will benefit society:
Sleep disorders are common in the general population, but certain populations such as older adults and those with co-morbid medical, psychiatric, and neurological disorders are at increased risk. The population over 65 years of age is increasing at an unprecedented rate in our history and is estimated to reach 62 million by the year 2025. In light of this fact, measures to improve health and quality of life in later life are major challenges that face our society. Although it has been recognized that nutrition and physical activity are important components of a healthy lifestyle, there is mounting evidence that poor sleep quality, quantity and sleep disorders appear to play an important role in both physical and mental health.

The problem the project is trying to solve:
Recent studies indicate a strong link between sleep and sleep disorders, such as sleep apnea with cardiovascular health. A considerable body of evidence clearly demonstrates that short sleep duration disrupts metabolic and cardiovascular function and has been associated with increased levels of cardiovascular risk factors, such as C-reactive protein, BMI, blood pressure, lipids, coronary artery calcium, ankle brachial index, glucose, and smoking. Therefore, an improved understanding of the relationship between sleep and cardiovascular health will lead to preventive approaches and treatment strategies to improve function, health, and overall quality of life in the growing population of older adults.

How this project will work:
The study will assess the role of early life and current cardiovascular disease (CVD) risk factor levels on sleep quality and sleep disorders in older age by examining a pre-assembled cohort of the Chicago Heart Association Study whose CVD risk status was characterized approximately 40 years ago. The specific aims are: (1) To determine the relationship between CVD risk status during young adulthood and early middle age with subsequent sleep quality, levels of daytime sleepiness, and sleep apnea in older age, (2) To assess whether sleep quality, daytime sleepiness, sleep apnea, and neuropsychological performance are associated with current level of cardiovascular health status and CVD risk factors in older adults, and (3) To explore the relationship between baseline or current CVD risk status (and which specific risk factors) best determine sleep quality, sleepiness, sleep apnea, and daytime neuropsychological performance in later life. Both objective and subjective measures of sleep will be used in conjunction with measures of CVD risk factors (C-reactive protein, BMI, blood pressure, lipids, coronary artery calcium, ankle brachial index, glucose, and smoking). A total of 1380 participants, who have been identified at baseline as having low risk (LR) for CVD or not LR for CVD, will undergo assessment of subjective and objective sleep measures (questionnaires and actigraphy). A subset of 150 participants will be admitted to the laboratory for more detailed physiological studies of sleep, sleepiness, and neuropsychological performance.

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