# NE\_TEMP2143: Changing Health Trajectory for Older Adults through Effective Diet and Activity Modifications

**Situation:** Midlife and older adults comprise the fastest growing population segment in the US. Baby boomers, who make-up much of this population shift, have higher rates of obesity, chronic disease and disabilities than previous generations. Older adults are at higher risk for developing arthritis, sarcopenia, diabetes, hypertension, hypercholesterolemia, age-related macular degeneration (AMD), and cardiovascular disease (CVD) than younger adults. These conditions that are associated with disabilities, compromise physical capacity and loss of independence but are preventable by diet or/and physical activity, providing the basis for the proposed work of this transdisciplinary team. Adults make daily choices without being aware of how that seemingly inconsequential decision may impact their health. Numerous biological, environmental, and behavioral risk factors influence an individual’s daily health choices. To better understand the factors influencing age-related diseases and health-promotion in midlife and older adults, this multistate research project will examine three areas of study: (1) molecular and mechanistic understanding of how nutrients and activity can influence age-related diseases; (2) environmental factors influencing the adoption of health-promoting lifestyle changes and (3) evaluation of lifestyle interventions that lead to measurable outcomes. The proposed projects under each of these study areas, either directly or indirectly address overweight/obesity and chronic disease reduction in midlife and older adults.

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| **Inputs** | **Outputs** | **Outcomes--Impact** |
|  | **Activities** | **Participation** | **Short (1-2 years)** | **Medium (2-4 years)** | **Long (5+ years)** |
| Funding/Grant DollarsStaffResearch BaseEquipmentMaterialsTimeVolunteersCommunity PartnersExisting Resources | **STUDY AREA 1:*** *Develop assays to measure telomere length in individuals with diets rich in antioxidants like fruits, vegetables and whole grains compared to other diets.*
* *Examine association of dietary intake, serum biomarkers for folate, vitamins B12 and B6, and homocysteine with AMD and the risk of overall morbidity and mortality from CVD, stroke and overall cancer.*

**STUDY AREA 2:*** *Determine aspects of the food environment that have more influence on older adults’ eating behaviors than others based on consumers’ perceptions.*
* *Investigate the role of demand-side barriers in impeding access to the food and the main causes of food insecurity in midlife and older adults.*

**STUDY AREA 3:*** *Review the current literature to identify lifestyle intervention programming attributes that increase likelihood of behavior change*
* *Determine whether detrimental health outcomes are associated time spent sitting and engaging in sedentary behaviors in adults with rheumatoid arthritis*
* *Develop and evaluate client-centered curriculum targeting aspects of whole-person wellness (e.g. nutrition, physical activity) for midlife and older adults.*
 | * Public
* Midlife and Older Adults
* Limited Resource Audiences
* Congregate meal sites
* Community centers and/or recreation centers
* Senior living communities
* Community Food Providers
* State agencies (e.g. departments of public health; departments on aging, etc).
 | * Increased knowledge of molecular and mechanistic impacts of the aging process (*Ex. telomere length assay will be completed for animal models and tested with and without compounds that cause elevated genotoxic stress*)
* Increased understanding of environmental factors influencing food choice in midlife and older adults (*Ex. Milestone: development of food environmental survey for older adult consumers*)
* Increased understanding of programming attributes leading to successful outcomes *(Ex. Milestone: Diet and physical activity program attribute review papers will be submitted).*
* Increased awareness of health promoting nutrition and physical activity behaviors by midlife and older adults *(Ex. Milestone: Publication of nutrition needs assessments based on multistate findings.)*
* Increased knowledge of effects/ consequences of poor health behaviors by midlife and older adults (*Ex. Milestone: Completion of formative nutritional needs study*)
 | * Increased community capacity to promote positive health behaviors *(Ex. Milestone: survey data from older adults about their perceptions of the food environment will be analyzed.)*
* Increased participation of midlife and older adults in prevention programs to increase physical activity and health promoting dietary behaviors
* Increased practice of preventive health promoting (dietary and physical activity) behaviors (*Ex. Milestone: Findings from “Fresh Conversations” will be published*).
 | * Better biomarkers for identifying increased risk for older adults *(Ex. Milestone: test and compare telomere length from samples in year 1 to samples in year 5 from human participants)*
* Lower rates of overweight/obesity in midlife and older adults
* Decreased healthcare costs
* Increased community capacity
* Changes in community enablers and behavioral settings that improve healthy eating in older adults
* Improved diet quality, physical activity and functioning of older adults *(Ex. Milestone: Analyze and evaluate the data from completed intervention studies; i.e. the RA study and multipronged research studies examining the impact of multiple exercise modalities and dietary intervention)*
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| **Assumptions** | **External Factors** |
| The increased national focus on overweight/obesity and greater public awareness of overweight/obesity and chronic disease prevention will mobilize communities to learn about and adopt behaviors that combat overweight/obesity and chronic disease. Continued resources and funding can be secured to support the NE\_TEMP2143 team’s research areas and programsThe growing number of midlife and older adults will mobilize communities to incorporate low-cost evidence-based health programs that promote successful aging. | Natural Disasters (drought, weather extremes, etc.)EconomyAppropriations changesPublic Policy changesGovernment RegulationsCompeting Public prioritiesPopulations changes (immigration, new cultural groupings, etc.) |