ASSESSING LIFESPAN AND AGING PHENOTYPES RESULTING FROM FOXO3 INDUCTION USING MOUSE MODELS
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Environmental signals, including caloric restriction and oxidative stress, trigger FoxO3 to upregulate genes involved in stress resistance, metabolism, cell cycle arrest, and apoptosis that may help mitigate age-related diseases. Activation of FoxO3 has been shown to have a profound life-extending effect on model organisms. Protective SNPs in FOXO3 are strongly associated with exceptional longevity in humans. The objective of this study is to test the relation between FoxO3 and longevity using mouse models. We generated a mouse line containing an extra copy of FoxO3 that can be induced at any age. In our model, FoxO3 remains driven by its natural promoter to avoid mis-expression in inappropriate cells and to maintain the gene’s ability to respond to signals such as stress. We are utilizing this new model to assess survival endpoints and test a panel of aging phenotypes reflecting healthspan throughout the mouse lifespan and compare these to similar human phenotypes.

ANALYSIS OF CELL AND MOLECULAR PHENOTYPES OF A HIGHLY REPLICATED LONGEVITY-ASSOCIATED FOXO3 VARIANT IN OLDER ADULTS
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Aging demographics in the US, and other industrialized nations, are resulting in rapidly increasing health care costs from age-related diseases. New therapeutic interventions to extend healthspan in older adults requires understanding connections between basic aging biology and human longevity factors. Using clinical samples from the Kuakini Honolulu Heart Program (HHHP) and their Offspring, we are examining potential links between molecular and cellular mechanisms of aging and the longevity associated FOXO3 genotype (carrier of SNP rs2802292 “G” allele). Telomere dynamics in leucocytes (LTL) have shown strong correlation with multiple lifestyle and health factors. We previously demonstrated a significant protective relation between FOXO3 longevity genotype and LTL in a cross-sectional study. Now we are assessing a longitudinal relation, at three time points over 20+ years, in older men. We are also exploring stem cell frequency and differentiation capacity in neurological and peripheral blood samples to assess FOXO3 genotype and human cell dynamics.

FOXO3, TELOMERE DYNAMICS, AND HEALTHY BRAIN AGING: A COBRE STUDY
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Human longevity is linked to genetic, cellular, and other complex biological and psychosocial traits. Aging is typically accompanied by gradual brain atrophy and cognitive decline, but the mechanisms are unclear. Cellular aging, characterized by telomere shortening and altered telomerase activity, is related to mortality and brain aging. Decelerated brain aging is associated with greater peripheral blood leucocyte telomere length (LTL) and, we hypothesize, may be linked to FOXO3 genotype. We will use MRI to assess brain structure and function cross-sectionally in 100 Kuakini Honolulu Heart Program Offspring. Atrophy and disrupted functional connectivity, markers of brain aging, will be examined in relation to FOXO3 and LTL. Associations between brain structural and functional differences, FOXO3 genotype and LTL will be investigated over a wide range of ages, controlling for other biological and psychosocial factors. Results may provide insight into mechanisms influencing the rate of brain aging, and may eventually extend human healthspan.

THE IMPACT OF APOE AND FOXO3 GENOTYPE ON THE RISK OF INTRACEREBRAL HEMORRHAGE AMONG AMERICAN MEN OF JAPANESE ANCESTRY
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This study assessed the impact of APOE e2, e4 minor alleles and the FOXO3 longevity-associated genotype (carrier of SNP rs2802292 “G” allele) on 34-year incidence of intracerebral hemorrhage (ICH). Cox regression models were performed to assess the impact of the APOE e2, e4 and FOXO3 G alleles on the incidence of ICH. A total of 6483 participants were eligible for the analyses. 213 participants developed ICH. Cox-regression model showed neither APOE minor allele vs. common genotype (APOE e3/e3: RR 0.89, 95% CI: 0.64-1.22, p=0.46) nor FOXO3 G carrier status (RR 0.97, 95% CI: 0.72-1.29, p=0.82) was associated with incident ICH. Conversely, both hypertension (RR: 1.46, 95% CI: 1.07-2.00, p=0.02) and low cholesterol level (RR: 0.99, 95% CI: 0.99-1.00, p=0.001) were associated with incident ICH. Carriage of APOE e2 or E4 alleles and the FOXO3 G allele do not appear to impact risk of ICH over 34 years in this cohort.

Session 3420 (Symposium)
LEVERAGING ACL FUNDING TO IMPLEMENT AN EVIDENCE-BASED FALLS PREVENTION PROGRAM IN THREE GWEPS
Chair: Ellen Flaherty
Discussant: Nina Tumosa

Primary care practices have a robust capacity to screen older adults for falls risk and refer them to evidence-based falls prevention programs delivered by Community Based Organizations (CBOs). However, due to a difference in the culture and nature of the work done in these two systems of care, there is often a lack of coordination and communication. Dartmouth has worked to bridge this gap for the past five years through our Health Resources and Services
Administration (HRSA)-funded Geriatric Workforce Enhancement Program (GWEP). GWEP goals include the promotion of Age-Friendly Health Systems by focusing on the 4 Ms: What Matters Most, Medication, Mentation and Mobility. GWEPs commonly operationalize the Mobility component via falls risk screening and prevention programs. Though CBOs are well suited to deliver falls prevention programs, implementing, disseminating and sustaining community-based falls prevention programs in an environment of cost containment, limited funds for community-based services and workforce issues is challenging. Previous Administration for Community Living (ACL) grant funding enabled us to develop the Dartmouth Falls Prevention Training Center (D-TC) using our expertise in training and community-based implementation of evidence-based interventions. The D-TC offers training and implementation support to primary care and CBOs on screening, referring and capacity-building for falls prevention programs. We will discuss challenges and successes implementing the Dartmouth falls prevention model with two additional GWEP grantees, Baystate and the University of Rhode Island. Benefits of leveraging ACL and HRSA funding to achieve synergistic goals to reduce falls in older adults will be explored.

THE DARTMOUTH FALLS PREVENTION TRAINING PROGRAM: PRIMARY CARE AND COMMUNITY-BASED ORGANIZATION COLLABORATION

Dawna Pidgeon, Dartmouth Centers for Health and Aging, Lebanon, New Hampshire, United States

Falls are a leading cause of fatal and non-fatal injuries in older adults. Older adult participation in community-based falls prevention programs can significantly reduce falls risk, however, identifying and referring individuals to appropriate programs can be challenging. Through Administration for Community Living (ACL) funding, we have developed a comprehensive Dartmouth Falls Prevention Training Program for healthcare and community-based organizations that includes (1) Falls screening in primary care; (2) “Balance Days”, a community-based education and balance screening event encompassing falls risk stratification and coaching into programs; (3) Instructor Training for Tai Ji Quan: Moving for Better Balance®, a highly effective falls prevention program; and (4) Implementation Training, a research informed workshop shown to enhance community-based program sustainability through participant retention. We will share strategies for sustainable collaborations between primary care and CBOs to reach at-risk individuals and improve lives and decrease costs associated with falls.

ADOPTING AND ADAPTATING A FALLS PREVENTION PROGRAM: LESSONS LEARNED FROM IMPLEMENTING A MODEL FROM A DIFFERENT CONTEXT

Alexandra Morelli, Carol Petrie, Christine Ferrone, and Phillip Clark, University of Rhode Island, Kingston, Rhode Island, United States

Geriatric Workforce Enhancement Programs (GWEPs) are ideally suited to develop and implement educational programs to transform the geriatric care system. They link academic programs, clinical partners, and community-based organizations to bridge care system gaps to improve the health and social care of older adults. Such a collaboration is especially important in falls prevention, where primary care assessments generate referrals to community programs that enroll older adults to reduce their risk of falling. However, exporting an evidence-based model developed in one context for implementation in another is not without its perils and pitfalls. This paper explores the challenges of applying a model developed elsewhere to the Rhode Island context, including the need to understand how structural differences in academic, primary care, and community-based systems require flexibility, innovation, and persistence in overcoming the networking challenges in these different settings. Recommendations for implementing program models in a variety of settings are explored.

ADAPTING TO CREATE INNOVATIVE VIRTUAL FALLS PREVENTION PROGRAMS FOR AT RISK OLDER ADULTS DURING A GLOBAL PANDEMIC

Dawna Pidgeon, Rebecca Dobert, and Maura Brennan, 1. Dartmouth Centers for Health and Aging, Lebanon, New Hampshire, United States, 2. Baystate Health, Springfield, Massachusetts, United States

Baystate Health’s Geriatrics Workforce Enhancement Program (GWEP) postponed implementation of Group Medical Visits focused on falls reduction for older adults in Springfield, Massachusetts due to COVID-19 and quickly shifted efforts to participate in Dartmouth’s Falls Prevention Training Program. Long standing GWEP Community Based Organizations (CBOs) were consulted, and all believed that the virtual Tai Ji Quan Moving for Better Balance® (TJQMBB) program would combat social isolation and improve older adults’ comfort with technology in addition to reducing falls during the COVID-19 pandemic. Baystate’s GWEP was able to reallocate grant dollars to support the purchase of equipment for CBOs to deliver TJQMBB virtually. While many challenges continue to arise, the innovative and collaborative approach between the two GWEPs and Baystate’s CBOs leveraging Administration for Community Living falls prevention funding has led to high level engagement and rapid implementation. Dartmouth’s model capitalizes on and strengthens existing GWEP partnerships with its CBOs.

Session 3425 (Symposium)

LEVERAGING PROMISING POLICIES TO SUPPORT LONG-TERM CARE RESIDENTS’ QUALITY OF LIFE POST-PANDEMIC

Chair: Deanne Taylor
Co-Chair: Janice Keefe
Discussant: Heather Cook

Long-term care (LTC) is highly regulated and often the policy language is complex and in tension with residents’ quality of life goals. Prior to COVID-19, LTC policy levered prioritized safety over other quality domains such as privacy, dignity, spirituality, and comfort. During the pandemic, this focus on safety regulations, while important, intensified in ways that often negatively impacted residents’ overall quality of life. In this symposium, we share findings from a five-year research project where we conducted a unique and expansive review of regulatory policy across four Canadian