Transportation is vital in the daily lives of older adults and provides access to health care services and health enhancing activities, such as social engagement. Disparities in mobility exist for older African American and Hispanic adults compared to non-Hispanic Whites, including higher likelihood of driving cessation at an earlier age and having a higher risk for reduced life space. This poster presents findings from a qualitative analysis of data from the Using Geo-Ethnography to Explore the Spatial Accessibility of Health Services for Aging Minorities Study (GeoSAS), a mixed methods study of older minority adults in Houston, TX. Using interpretive phenomenological analysis, the transcripts of semistructured interviews with 23 older adults (13 African American and 10 Hispanic; 17 female; mean age = 71.3 yrs, SD = 6.3 years) were analyzed to address the research question: What are the mobility experiences and perceptions of minority older adults regarding healthcare access and social engagement? Based on an ecological systems theoretical framework, we found reciprocal influences of (1) healthcare systems and transportation utilization and (2) participants' health and well-being, mobility, and social engagement. Support from family members and financial capacity were critical for participants' mobility. Implications of this research include educating health care providers about patients' transportation experiences and barriers, optimizing social support to increase mobility, and addressing systematic disparities in transportation access to enhance health and well-being for older minority adults.

VALIDATING SILICONE WRISTBANDS TO MEASURE PESTICIDE EXPOSURES AMONG OLDER ADULTS -- PROOF-OF-CONCEPT STUDY

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Silicone wristbands have been used to measure exposure to pesticides and other chemicals among children and younger farm workers, but not in older adults. Thus, we aimed to examine exposure to pesticides using silicone wristbands in a small cohort of older adults living on agricultural land, with variable contact with fields and pesticides. We also investigated correlations between pesticide levels on wristbands and urinary pesticide metabolites. Organophosphate (OPH) pesticides and several organochlorines were measured in wristbands worn by 15 males age 70+ (10 farmers using pesticides and 5 non-farmers with no recent pesticide use). Wristbands were worn continuously for 5-days. End-of-day urine samples were collected on days 1-3-5. Spearman correlations and Wilcoxon Scores were calculated. Five pesticides were quantified in the wristbands and detection frequencies ranged from 40-90%. In urine,12 OPH metabolites were quantified, but only 5 were detected in >50% of the samples. None of 5 urinary herbicides were detected. Imputation was performed by dividing minimum-detect by square-root-2. Malathion was only detected in farmers compared to non-farmers. Correlations between OPH urinary metabolites and wristband were examined but only two were significant and were negative in direction. Notably, organochlorine DDE on the wristbands was significantly correlated with 3 OPH metabolites. These unexpected relationships, based on small numbers, suggest a need to replicate this work in a larger study sample to explore potential for confounding or mixtures in future studies of pesticides and health in older farmers.

MACHINE LEARNING ANALYSIS OF MOUSE FRAILTY FOR PREDICTION OF BIOLOGICAL AGE AND LIFE EXPECTANCY

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In mammals, the lack of accurate biomarkers for biological age is a current limitation to identifying novel aging interventions. Molecular biomarkers including DNA methylation hold promise but are invasive and currently expensive. The Frailty Index (FI) quantifies the accumulation of health-related deficits and is fast, cheap, and non-invasive. Studies have demonstrated that FI correlates with age and mortality risk in mice and humans. However, the FI has not been modelled to directly predict biological age or life expectancy. We tracked aging male C57BL/6 mice until their natural deaths, scoring them longitudinally with the FI. We find that FI score correlates with and is predictive of age and that some but not all parameters of the FI are individually well-correlated with age. To better predict chronological age, we performed an elastic net regression on the FI termed FRIGHT (Frailty Inferred Geriatric Health Timeline) Age. FRIGHT Age is a strong predictor of age (r2=0.73, median error=47.5 days), but is not superior to chronological age at predicting life expectancy. To better predict mortality, we built a random forest model termed the AFRAID (Analysis of Frailty and Death) score, which predicted survival at multiple ages (r2=0.375, median error = 46.4 days). The FRIGHT and AFRAID models were responsive to chronic treatment with enalapril (30mg/kg/day), an angiotensin converting enzyme inhibitor that extends healthspan, and methionine restriction, a dietary intervention that extends healthspan and lifespan. Our findings underscore the value of assessing non-invasive biomarkers for aging research and may help speed the identification of aging interventions.

WHITE MATTER INTEGRITY UNDERLYING SUBSYNDROMAL DEPRESSION SYMPTOMS IN DEMENTIA CAREGIVERS

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