developing measures of functional performance with increased ecological validity. While "home labs" are becoming more accessible at institutions around the world, the research design process in these spaces contains hidden challenges that can be a barrier to entry for the uninitiated. We identify and reflect on these challenges through the lens of a recent protocol built to assess upper-body performance among older adults during activities of daily living. The U-M HomeLab served as a proving ground for four example tasks: opening a water bottle, sorting pills, tying an apron, and hanging laundry. The evolution of each task is traced through ideation, testing, and refinement, culminating in a pilot among nine community-dwelling volunteers aged 61 to 72 with upper-body pain. Based on this experience, we recommend that designers of naturalistic tasks in homelike environments give special consideration to (1) feasibility, (2) scorability, and (3) safety while carefully balancing standardization against verisimilitude. In turn, each of these elements must be grounded not only in the context of the facility itself but also in the population using that facility. Among older adults with upper body pain, considerations included remaining cognizant of fall risk, anticipating and capturing compensatory behaviors, tailoring task difficulty for a wide range of physical ability, and accounting for the impact of historically gendered divisions of labor on task performance.

DIETARY INTAKE AND NUTRITIONAL RISK AMONG OLDER AMERICANS

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A suboptimal diet and nutritional deficiency are among the leading causes of chronic diseases (e.g., cardiovascular diseases, metabolic syndrome, cancer, and osteoporosis), morbidity, and mortality. The objective of this study is to assess dietary intake and nutritional risk among older Americans. The dietary intake of 15 food and nutrients that are closely associated with the risk of poor health was assessed based on the dietary guidelines and nutritional goals for older Americans using a nationally representative sample of older adults (N=7,737) in the Health and Retirement Study Health Care and Nutrition Survey. The average consumption of most food and nutrients was out of the optimal range. For example, older men and women consumed 1.32-1.35 cups of dairy products and 1.23-1.29 ounces of whole grains, which is less than half of the suggested amount. The average consumption of sodium, on the other hand, was over 12 times greater than suggested dietary recommendation for older men and about 10 times greater for older women. The nutritional risk index (range: 0–15) was created by summing the number of dietary risk factors (not meeting the dietary guidelines and nutritional goals), the index scores for older men and older women were 11.05 (SD=2.31) and 10.09 (SD=2.60) respectively, suggesting the high level of nutritional risk. A healthy diet should be encouraged to prevent chronic diseases and improve the health of older adults. Nutritional education may be an effective way to promote a healthy diet.

ALTERATIONS IN TARGETED METABOLOMICS PRIOR TO UNINTENTIONAL WEIGHT LOSS IN OLDER ADULTS

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In older adults, unintentional weight loss (UWL) is associated with poor outcomes, but its pathophysiology remains poorly understood. We sought to identify potential biomarkers of UWL using targeted metabolomics, including 8 conventional metabolites, 45 acylcarnitines, and 15 amino acids. We identified individuals from the Cardiovascular Health Study All Stars with UWL (n=40) or weight stability (WS; n=40) from Years 9 to 11. Participants had WS through Year 8. UWL was defined as experiencing >6% weight loss from Years 9 to 11 and self-reporting that loss as unintentional. Mean plasma metabolite concentrations measured in Year 9 were compared between individuals with UWL or WS between Years 9 and 11. The strongest signals in metabolomic differences between individuals going on to experience UWL versus WS were observed among the branched-chain amino acids, valine (236.54 ± 54.43 vs. 215.79 ± 32.69 μM, 95%CI: -40.81, -0.70) and isoleucine/leucine (159.09 ± 36.53 vs. 142.75 ± 23.78 μM, 95%CI:-30.10, -2.59); lactate (1.23 ± 0.44 vs. 1.00 ± 0.57 μM, 95%CI: -0.45, -0.001); histidine (35.69 ± 5.33 vs. 38.62 ± 4.86 μM, 95%CI: 0.65, 5.20); the medium-chain acylcarnitine octenoyl carnitine (C8:1) (0.23 ± 0.10 vs. 0.29 ± 0.14 μM, 95%CI: 0.01, 0.12); and long-chain acylcarnitine myristoyl carnitine (C14) (0.04 ± 0.01 vs. 0.03 ± 0.01 μM, 95%CI: -0.01, -0.002). These findings suggest altered branched-chain amino acid and fatty acid metabolism and increased oxidative stress and inflammation may be evident before individuals undergo UWL. Further investigation of these pathways may reveal novel preventive or treatment strategies for UWL.

SELF-ACCEPTANCE BUFFERS NEGATIVE SOLITUDE-PHYSICAL ACTIVITY LINKS IN OLD AGE

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Loneliness is positively associated with a number of negative psychological and health outcomes. Solitude, a related yet distinct phenomenon, can have positive or negative ramifications depending on the context. As older adults spend significant time in solitude, there is particular need to investigate the effects of solitude on the health of this specific segment of the population. This study investigated everyday life associations between solitude and obstacles to physical activity as well as resources for overcoming these obstacles in order to determine whether and for whom solitude is negatively or positively associated with physical activity. Multilevel modelling was used to analyze data from 138 community-dwelling adults aged 65 years and older. Participants completed three daily questionnaires over a period of ten days concerning