



LONGITUDINAL AGING STUDY AT TOWSON [LAST]

Improving healthy aging through assessing the impact of physical activity and energy expenditure on the trajectory of aging

A CLOSER LOOK

Physical activity in the elderly may reduce and prevent the incidence of chronic health conditions, and therefore theoretically lead to increased healthspan, or healthy aging. Consequently, there is a need for the evaluation of physical activity in relation to healthy aging in older adults, especially those with comorbid conditions. Therefore, the primary goal of LAST is to follow individuals who are attempting to become “healthy agers” through engaging in physical activity at the Towson University Wellness Center. Participants complete a battery of questionnaires and tests to define their current state of health (e.g. health survey, sleep quality, blood parameters), physical activity (measured by accelerometers) and functional status (e.g. short physical performance battery test, grip strength, walking economy, aerobic fitness, resting metabolic rate, body composition, and blood flow) that is repeated yearly. We aim to define a trajectory of functional status over time that will allow for the longitudinal evaluation of the impact of physical activity on their aging status. Significant outcomes from LAST thus far include discovery of overall and time-of-day relationships between total daily physical activity in older adults and disease burden; discovery of relationships between total daily physical activity and inflammation and potential underlying pathways connecting the two with subsequent physical function; and discovery that a higher energetic cost of walking is associated with reduced aerobic capacity and greater fatigability with aging, suggesting that individuals may be adjusting functionality to fit their level of fatigue with age.

OUTCOMES

- Objectively measured physical activity continuously over 7 days
- Analysis of blood factors related to inflammation and metabolic disorders
- Measurement of functional status, energetic cost of walking, and peak energy expenditure
- Body composition measurement through dual energy x-ray absorptiometry (dxa)

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