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## FSU's Antonio Terracciano links energy rates to personality traits

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There's power in positivity, particularly in positive personality traits.

The recent culmination of the research project formally titled "Personality, Metabolic Rate and Aerobic Capacity," fronted by Antonio Terracciano, associate professor in the Department of Geriatrics, has examined the correlation between personality and energy rates, concluding that some personality traits are linked to higher cardiorespiratory fitness levels and increased longevity.

"The basic discovery process is perhaps the most fulfilling aspect of research," Terracciano said. "More specifically to the research on personality and energetics, it was fascinating to examine how our general tendencies to feel, think and behave are related to basic metabolic rate and peak energetic capacity. The findings can always be surprising."

Terracciano conducted the study in collaboration with the National Institute on Aging (NIA) and the College of Medicine's Dr. Angelina Sutin. Terracciano said that this specific research project is a limb of his broader studies of the impact of physiological traits on physical and mental health. Studying disposition and behavior can aid in the understanding and maintenance of health and overall welfare, he said.

Traits such as extroversion, emotional resilience, openness, agreeableness and conscientiousness were considered indicators of a resilient, positive personality. Terracciano said a neurotic personality was defined as one prone to "experience emotional distress, anxiety, and depression." Terracciano found that study participants with who exhibited positive traits, as opposed-neuroticism, which is a negative trait, were more likely to comparatively have higher aerobic capacities.

The study enlisted 642 adults aged 31 to 96 as test subjects. Personality of each individual subject was determined through a 240 item questionnaire called the Revised NEO Personality Inventory, which assessed subjects based on commonly held indicators of personality agreed upon by most modern psychologists.

Over the four-year period of research, subjects' energy expenditure rates were measured during walking tasks where participants were charged to walk a distance 400 meters. Metabolic rates were measured first at rest. While during the tasks, subjects' aerobic capacities were tested both through normal walking paces and at maximal walking speeds.

The more resilient personalities exhibited not only greater aerobic capacities but they also completed the walking tests more quickly than their more neurotic counterparts.

"In a sample of older adults, we found that energy expenditure is related to personality traits," Terracciano said. "In particular, those who were more emotionally resilient, extraverted, open-minded, and conscientious were able to walk faster, had greater aerobic capacity at peak walking, and were able to cover the same distance using less energy, meaning they were more efficient."

While aerobic capacity was definitively affected by personality traits, the results alternatively revealed the link between personality types and metabolic rate to be tenuous with no marked relation.

"We were surprised to find that personality was unrelated to resting metabolic rate," Terracciano said. "For example, anxiety had little impact on the level of energy required for the basal metabolic functioning, although it was related to peak energy capacity."

At least in regard to metabolic rate, being neurotic remains neither detrimental nor beneficial to one's health. Yet Terracciano's findings do demonstrate that having a positive personality is clearly advantageous to one's health in

general, perhaps even lead to increased longevity. College is the opportune time for students to be aware of their lifestyles and work towards leading longer, happier lives.

“There is a growing interest in successful longevity at FSU,” Terracciano said. “Personality traits and aerobic capacity are two of the many factors that contribute to longevity. Students can relate to this research for other reasons too. Improving personality-specific coping skills, for example to support a more active lifestyle or reducing health-risk behaviors (such as smoking and alcohol abuse), can promote health and well-being throughout the life.”