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Identifying Patterns of Stress Through Biological Markers

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Abstract

The integration of biologic and behavioral processes has received increased attention as a means to identify biomarkers of functional and disease outcomes in the areas of human performance, medicine, and mental health. Stress is one candidate process associated with multiple adverse health and functional outcomes, including myocardial infarctions, depression, and lost work productivity. Indeed, interventions that target stress show incremental improvements in patients' health and mental functioning relative to treatment as usual. However, the effectiveness of intervention efforts are largely constrained by the ability of an individual to detect the onset of stress, which is often not recognized at a time when stress reduction strategies may be most effective. One obstacle to the detection of stress is the over-reliance on the individual's subjective experience, which requires self-knowledge that is commonly limited. One promising means of overcoming such limitations is the detection of physiologic and behavioral patterns that presage the stress state. The present study builds on the extant theoretical and empirical literature on autonomic nervous system and behavioral responses to stress to detect when individuals transition from a resting to a stress state. Findings will be presented and framed in the context of the clinical literature.