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Smoking Cessation, Metabolic Risk Behaviors, and Stress in Young Adult Smokers

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Background: Health risk behaviors typically cluster together, such that people who engage in some risk behaviors (e.g., smoking) are more likely to engage in others. Across age groups and cultures, smoking is associated with several metabolic risk behaviors: a high-fat diet, physical inactivity, poor sleep, and (most strongly) low fruit and vegetable consumption (FVC). Smoking cessation may support changes in metabolic risk behaviors, by influencing self-efficacy and readiness to change those behaviors. We examined these relationships in young adult smokers. We hypothesized that smoking cessation would be associated with readiness to change metabolic risk and subsequent metabolic risk behavior change, moderated by stress management.
Methods: Participants were young adult smokers in the United States (N=500; M age = 20.9; 54.6% female; 73.8% non-Hispanic White) enrolled in a randomized controlled trial (RCT) of a Facebook smoking cessation intervention. Measures included stage of change for five metabolic risk behaviors: low FVC, high-fat diet, physical inactivity, poor sleep hygiene, and poor stress management. Moderated mediation was used to examine the relationships between smoking cessation at T1 (predictor), readiness to change metabolic risk behaviors at T2 (mediators), stress management at T3 (moderator), and metabolic risk behavior profile at T3 (outcome) over 9 months. **Results:** T1 smoking abstinence was associated with greater readiness to increase FVC at T2, which predicted lower likelihood of T3 metabolic risk (β=-.20, 95% CI [-.54,-.02]). This indirect effect was moderated by stress management such that greater readiness to increase FVC at T2 was associated with lower T3 metabolic risk for high-stress participants (β=-.89, 95% CI [-1.31,-.47], p< .001), but not for low-stress participants (β =-.22, 95% CI [-.48,.08], p=.10).
Conclusions: Young adults who quit smoking had lower likelihood of engaging in metabolic risk behaviors 9 months later. Among young adults with high stress, those who quit smoking had greater readiness to increase FVC and lower likelihood of subsequent metabolic risk. Future smoking cessation interventions for young adults could aim to build their self-efficacy for increasing FVC and teach skills that can be applied to both smoking and other health behaviors. Young adults who are experiencing high stress may benefit the most from these intervention components.

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