

EFFICACY OF A BEHAVIORAL INTERVENTION PROGRAM AND IMPROVING MEASURES OF STRESS ON REDUCTION OF THORACIC AND EPICARDIAL FAT

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BACKGROUND. The efficacy of multifactorial lifestyle programs focusing on stress management on reducing measures of visceral fat is unknown. We examined whether a lifestyle intervention program would reduce thoracic and epicardial fat.

METHODS. Subjects were randomized either to standard of care or the RENEW ProgramTM involving 9 bi-monthly face-to-face web sessions over 16-18 weeks followed by monthly maintenance sessions over 80 weeks. The program included modules on responding to stress more effectively, relaxation, nutrition, physical activity and social support. Subjects received baseline and 2-year follow-up whole body CT scans with epicardial and thoracic fat volume measured by the QFAT software. Analysis of covariance evaluated whether changes in epicardial and thoracic fat volume differed between control and intervention groups, controlling for risk factors. We further applied multiple regression analysis to examine the relation of change of epicardial and thoracic fat volume and change of psychosocial stressors and coping skills.

RESULTS. Forty-two subjects (mean age 46.4 ± 6.3 years, 19.1% female) completed this substudy. 2-year adjusted changes in epicardial fat were 11.9 and -13.3 cm^3 for the control (n=19) and intervention (n=23) groups, respectively (p=0.03 for difference), and in thoracic fat were -18.6 and -50.5 cm^3 , respectively (p=0.09 for difference). Subjects with increases (improvements) in the following psychosocial measures had decreases in epicardial fat: type A behavior traits (p=0.009), social support (p=0.02), cognitive hardiness (p=0.002), negative appraisal (p=0.02), threat minimization (p=0.01), sleep (p=0.005), exercise (p=0.008) and in thoracic fat: social support (p=0.04), cognitive hardiness (p=0.04), negative appraisal (p=0.03), psychological well-being (p=0.02) and alcohol, recreational drugs and cigarette use (p=0.01).

CONCLUSIONS. Our preliminary findings suggest a potentially beneficial impact of a multifactorial behavioral program with improvements in specific psychosocial and stress measures associated with improvements in epicardial and thoracic fat. Larger scale studies are needed to confirm findings and examine if they reduce cardiovascular risk.