

Gender Related Differences in Stress and Health Outcomes in College Age Students

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ABSTRACT

Background and Purpose: Rates of obesity and metabolic disorders in young adults are becoming more prevalent in today's society. To date, only a few investigators have compared the effect that stress may have on health and metabolic outcomes in college age adults. The purpose of this study is to determine the relationship between stress and cholesterol levels in male versus female college age students. **Methods:** Thirty-six adults ages 20 to 27 participated in this study. Total blood cholesterol, HDL, LDL, triglycerides, TC/HDL ratio, and glucose were measured one time using the Cholestech LDX® after either an overnight, or 4-hour fast. Subjects were then asked to complete two surveys, the Holmes-Rahe Life Stress Inventory® for adults, and the Holmes-Rahe Life Stress Inventory for Young Adults®. Independent t-test and linear regression were used to analyze differences between male and female responses. Significance was set at the 0.05 level. **Results:** Total Life Stress Inventory® score for adults was significantly higher in female subjects ($F=166.8 \pm 116.4$; $M=146.4 \pm 123.2$; $p= 0.003$). No significant differences were noted in cholesterol levels and reported stress between genders. However, trends were noted for BMI, body weight, and triglyceride levels. Individual relationships were evaluated between health parameters and each stress inventory question. Overall, both males and females reported higher stress related to the beginning and end of school, change in living conditions, and diet. Significant relationships between different stressors and measured health parameters are given in the table below.

Stressor	Yes Response	No Response	P-value
Beginning or end of school			
Total cholesterol ($\text{mg}\cdot\text{dL}^{-1}$)	182 ± 36.3	164 ± 18.1	0.007
LDL cholesterol ($\text{mg}\cdot\text{dL}^{-1}$)	91.7 ± 34.7	84.6 ± 19.5	0.04
Triglycerides ($\text{mg}\cdot\text{dL}^{-1}$)	154.4 ± 111.7	102.5 ± 52.6	0.005
Change in living conditions			
BMI ($\text{kg}\cdot\text{m}^{2(-1)}$)	23.7 ± 4.1	23.6 ± 2.1	0.06
Change in eating habits			
BMI ($\text{kg}\cdot\text{m}^{2(-1)}$)	24.2 ± 4.2	23.4 ± 2.0	0.03
TC/HDL ratio	3.4 ± 1.8	3.3 ± 1.0	0.01
Vacation			
TC/HDL ratio	4.2 ± 1.7	3.0 ± 0.9	0.01

Conclusion: This preliminary investigation revealed that college age females report higher life stress levels than males. In addition, several defined stressors were associated with negative health outcomes. More investigation incorporating physical activity level, dietary habits, and a larger sample size needs to be completed in the future.