

Differences between male and female students in cardiovascular and endocrine responses to examination stress.

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Differences between male and female students in cardiovascular and endocrine responses to examination stress.

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Abstract

Background: It is known that stress alters biological processes. The aim of the present study was to examine the effect of examination stress in young adult male and female students.

Methods: Examination stress was studied in 28 young female and 21 young male volunteer students of Rafsanjan university of medical Sciences, 0.5 hour before Physiology examination (stress condition) at 10-12 a.m. and 45 days after examination (control condition) at the same time in the year 2003.

Results: There were no differences in BMI of male and female groups at control and stress conditions. Subsequent analysis between two sexes showed that males had significantly higher systolic [SBP (124.7±4.01 mmHg)] and diastolic blood pressure [DBP (76.56±2.48 mmHg)], heart rate [HR (84.6±2.63)] increases in stress condition, in both sexes, but in males the increasing of HR is more than females, whereas females had higher respiratory frequency increase in stress condition, compared to males. Moreover, there were no differences in SBP, DBP and HR responses to stress condition in different phases of the menstrual cycle. The increased amount of the plasma cortisol in stress condition was significantly higher in males (485.3±37.9 in stress vs. 335.7±27.9 pg/ml in control) than females, stress also reduced females' ACTH in both phases of the menstrual cycle (13.3±0.8 in stress vs. 27.47±7.25 pg/ml in control), but in males stress increased ACTH (43.72±4.45 in stress vs. 49.29±3.25 pg/ml in control). In males, stress induced a significant decrease in plasma testosterone. Plasma progesterone in response to stress showed a significant decrease in the luteal phase.

Conclusion: These data suggest that, the responses to physiology examination stress are different between two sexes.

Reference:

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