

Sex Differences in Lipid, Lipoprotein, Cardiovascular, and Neuroendocrine Responses to Acute Stress

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Sex Differences in Lipid, Lipoprotein, Cardiovascular, and Neuroendocrine Responses to Acute Stress

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Abstract

This study had two objectives: (a) to examine whether or not lipids and lipoproteins change in response to acute behavioral stress in young adults; and (b) to test the extent of sex differences in the magnitude of the lipid, lipoprotein, neuroendocrine, and cardiovascular changes during stress. Nineteen women and 22 men participated in a serial subtraction task, a videotaped speech task, and a self-evaluation task. The cholesterol portions of low density and high density lipoproteins, triglycerides, free fatty acids, epinephrine, norepinephrine, heart rate, and blood pressure were examined at rest and during each stressor. Repeated measures analyses of variance indicated that stress-related levels of low density and high density lipoprotein-cholesterol, triglycerides, free fatty acids, norepinephrine, heart rate, and blood pressure were elevated, relative to baseline, and that these responses were partially task or order dependent. Subsequent analyses of sex differences showed that males had larger low density lipoprotein-cholesterol and blood pressure increases during all tasks, relative to those of females, and females had larger heart rate responses to the speech task, relative to those of males. There were no sex differences in plasma catecholamine adjustments. These data demonstrate that the cholesterol fractions of high and low density lipoproteins increase during acute psychological stress, and are the first to systematically examine male/female differences in those stress responses.

References

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