ABSTRACT: The aim of the current work was to investigate autonomic cardiac changes associated with acute exposures to environmental tobacco smoke (ETS). A mixed analysis of variance (ANOVA), composed of one between subject factor (gender) and two within factors (stimulus, concentration), was used to determine if heart rate variability (HRV) was altered. 

SUMMARY OF RESULTS: The short-term fractal scaling exponent (Alpha-1) and the ratio of low frequency to high frequency power ratio (HF/(LF+HF)) Spectral Power, Approximate Entropy (ApEn) were lower in males compared to females. In addition, male heart rates were elevated during early ETS post-exposure compared to pre-exposure and sham exposure. 

BACKGROUND: ETS exposure has been found to result in potentially harmful changes in autonomic balance. 

METHODS: Subjects: 19 (10 male/9 female) non-smoking volunteers (age 33.6 +/- 6.6 yrs) during 10 minutes exposure periods inside an environmental chamber. Measurements: HRV was calculated using CardioSoft (Houston, TX). HRV was calculated using CardioSoft (Houston, TX). Our data suggest that, in addition to tonic HRV gender differences, cardiac responses to some acute airborne particulates are gender related. 

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