**ASSOCIATION BETWEEN E-CIGARETTE USE AND CARDIOVASCULAR DISEASE**

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**Introduction:** In 2016, 3.2% of US adults and 11.3% of high school students reported using e-cigarettes in the preceding 30 days. Among 18-24-year-old e-cigarette users, 40% of e-cigarette users were not regular cigarette smokers. The association between e-cigarette use and cardiovascular disease (CVD) remains unknown. CVD affects more than 90 million and kills 800,000 people annually. It cost $316.1 billion per year in 2012 to 2013. The purpose of this study was to determine the association between e-cigarette use and CVD.

**Methods:** The study is a cross-sectional analysis of the 2016 Behavioral Risk Factor Surveillance System (BRFSS) an annual chronic disease risk factor survey conducted by the CDC. The sample included 66,795 respondents that reported ever regularly using e-cigarettes. The control group was the 343,856 respondents that reported never using e-cigarettes. Odds ratios were calculated using logistic regression analysis. Among the covariates tested, age, sex, smoking status, diabetes, exercise and Body Mass Index (BMI) categories showed significant effects on the model and were adjusted for in the outcomes. Since this was a telephone administered questionnaire, fatal events were not included.

**Results:** Overall 21% of BRFSS respondents reported ever using e-cigarettes, with 54.7% of them being female (P <0.0001). Compared with non-users, e-cigarette users had a lower mean age (44 vs 57 years [P <0.0001]), lower mean BMI (27.7 vs 28.1 [P <0.0001]) and a lower rate of diabetes (9.8% vs 12.1% [P <0.0001]). They however had higher rates of cigarette smoking (78.7% vs 37.4% [P <0.0001]). Compared with non-users, e-cigarette users had higher odds of myocardial infarction (adjusted Odds Ratio[OR] 1.59 [1.53 – 1.66]), angina or coronary heart disease (OR 1.4 [1.35 – 1.46]) and stroke (OR 1.71 [1.64 – 1.8]).

**Conclusion:** E-cigarette use is associated with higher rates of non-fatal myocardial infarction, non-fatal angina/coronary heart disease and non-fatal stroke. However, there is need for cohort studies to establish causation and study hypertension and fatal events.