Abstract title: **Acute physiological effects of e-cigarette in human: a systematic review & meta-analyses**

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Background: Electronic cigarettes (e-cig) were introduced to the market in 2004 as a smoking cessation device and since then millions of people have become e-cig users. At present, teenagers and young adults have been reported as the largest groups among those users. However, several cases of recent deaths & clinical incidents related to e-cig have raised question about their safety.

Objective: To summarise the current literature observing the acute cardio-respiratory and inflammatory responses to smoking an e-cig in humans.

Method: Studies were searched in PubMed, SCOPUS, Web of Science and Cochrane Library till September 19th, 2019. Included articles were English or French language peer-reviewed articles that observed the pre and post physiological responses after acute smoking of an e-cig.

Result: Initially 14039 relevant articles were found and after reviewing 63 full text articles, 32 studies were included. The preliminary meta-analysis results showed that e-cig use: increased in heart rate (Standardised mean difference [SMD]= 0.442; 95% CI 0.302 - 0.582), systolic (SMD= 0.241; 95%CI 0.143 - 0.340) & diastolic blood pressure (SMD= 0.581; 95%CI 0.368 - 0.794); and decreased exhaled nitric oxide (SMD= -0.270; 95%CI -0.466 - -0.075).

Conclusion: Initial results of our study suggest that acute smoking of e-cigs could have potential negative impacts on human health. These results should add to the larger discussion about the regulation of e-cigs.