

# INPLASY PROTOCOL

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None declared.

## Was e-cigarette a Risk Factor for Stroke? A Systemic Review and Meta-analysis

Zhao, K<sup>1</sup>; Yang, M<sup>2</sup>.

**Review question / Objective:** To confirm the association between using e-cigarette and occurrence of stroke.

**Condition being studied:** The association between using e-cigarette and occurrence of stroke. **Data Sources:** We searched PubMed, EMBASE and Cochrane for clinical epidemiology studies without restriction of publication years. Individual participant data from three sources were also available to supplement analyses of published literature. **Eligibility criteria for selecting studies:** Clinical epidemiology studies reporting the association between using e-cigarette and occurrence of stroke.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 22 August 2021 and was last updated on 22 August 2021 (registration number INPLASY202180086).

### INTRODUCTION

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## METHODS

**Participant or population:** Exposed group and no-exposed group differed in using e-cigarette.

**Intervention:** Using e-cigarette.

**Comparator:** No using e-cigarette.

**Study designs to be included:** Observational researches of clinical epidemiological studies including cross-sectional study, case-control study, cohort study.

**Eligibility criteria:** Inclusion criteria: (1) Language, regions, publication years of articles were not restricted; (2) Observational researches of clinical epidemiological studies including cross-sectional study, case-control study, cohort study; (3) Exposed group and no-exposed group differed in using e-cigarette; (4) Baseline characters were no statistical different between exposed group and no-exposed group; (5) Endpoint of observation was stroke; (6) Analysis of cohort studies' outcomes were performed completely. Exclusion criteria: (1) Duplication; (2) Reviews, comments, letters, case reports, protocols, notes and conference papers; (3) Animal experiments; (4) Contents of articles were irrelevant to this meta-analysis.

**Information sources:** Literature search was performed in three public electronic databases of PubMed, Embase and Cochrane.

**Main outcome(s):** Stroke occurrence.

**Quality assessment / Risk of bias analysis:** The quality assessment of included articles was performed via the Newcastle-Ottawa Quality Assessment Scale Cohort Studies (NOQAS-CO), Newcastle-Ottawa Quality Assessment Scale Case-control Studies (NOQAS-CA), Agency for Healthcare Research and Quality (AHRQ) before data extraction.

**Strategy of data synthesis:** Meta-analysis was performed using corresponding

modules in Software for Statistics and Data Science (Stata, version 15.1; College Station, Texas 77845 USA). The pooled effect with its 95%CI were calculated by random effects model. I-square (I<sup>2</sup>) was used to test the heterogeneity.

**Subgroup analysis:** To reduce heterogeneity, we would recalculate the pooled effect of the remaining studies after omitting the study with the lowest quality or perform subgroups analysis directly.

**Sensitivity analysis:** Sensitivity analysis was performed to evaluate the stability of overall results by recalculating the pooled effect of the remaining studies after omitting the study with the highest quality or the random effects model was switched to fixed effects model.

**Country(ies) involved:** China.

**Other relevant information:** Language, regions, publication years of articles were not restricted.

**Keywords:** Electronic cigarette, Stroke, Meta-analysis, Odds ratio.

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