

# Call of Abstracts - "International conference on the E-Cigarette: patterns of use and health impacts"



## Call of abstracts

"International conference on the E-Cigarette: patterns of use and health impacts" - Paris, on 5-6th December 2022

### Submission form

Poster & oral presentation

### Contact details of the corresponding author

#### Title

Mr

#### First name

Roberto A

#### Last name

Sussman

#### E-mail

sussman@nucleares.unam.mx

#### Institution / company

National Autonomous University of Mexico (UNAM)

#### Unit / department

Institute for Nuclear Sciences (ICN)

#### Address

Circuito Exterior SN, C.U., Alcaldia de Coyoacan  
Ciudad de Mexico, 04510  
Mexico

### Background information

#### Type of submission

Oral or poster

#### Theme of conference

Health impact

## Keywords

Contents and emissions chemical

Risk assesement

Toxicants

## Abstract title

Methodological critique of laboratory studies on metals in e-cigarettes emissions. Implications for studies on organic toxicants.

## Author's contact details :

### Title

Mr

### First name

Roberto A

### Last name

Sussman

### E-mail

sussman@nucleares.unam.mx

### Institution / company

National Autonomous University of Mexico (UNAM)

## Co-author's contact details :

### Number of co-authors

1

### Co-author 1

Sebastien Soulet Ingesciences

## Abstract details (poster & oral)

### Background, method, results and conclusions

**BACKGROUND.** There is a broad consensus that e-cigarette (EC) use exposes users (vapers) to significantly less toxicant content than cigarette smoking. However, vapers are still exposed to harmful and potentially harmful compounds. In particular, the presence of metallic compounds is a serious concern that needs to be addressed by methodologically sound laboratory testing.

**METHOD.** We reviewed 12 laboratory studies published after 2017 that have detected metals in emissions of various EC's. We examined the experimental techniques to test the consistency between puffing parameters, device characteristics and approximation to their real life usage from surveys of vapers in natural conditions. To infer exposure risks we compared experimental outcomes with strict toxicological references (medicinal, environmental and occupational). We also reviewed several studies detecting carbon monoxide (CO) and free radicals.

**RESULTS.** All reviewed studies detecting metal exposure above toxicological markers exhibited serious methodological flaws: (i) testing powerful devices with inappropriate puffing protocols that lead to overheating conditions divorced from real life usage, (ii) testing devices acquired years before the

experiments and (iii) failure to provide sufficient information for the proper interpretation of outcomes and possible laboratory replication. Similar flaws were found in studies detecting CO and free radicals

CONCLUSIONS. All studies reporting levels above toxicological markers exhibit serious methodological flaws and involve unrealistic puffing protocols. All reviewed emission studies on low powered devices that were conducted appropriately resulted in metal contents that are far below strict toxicological markers. This conclusion applies to studies detecting CO and free radicals.

## Main messages

Available evidence on well conducted laboratory testing reveals metal content in EC emissions to be far below strict toxicological markers. There is a pressing need for appropriate consensual standards for testing high powered devices

## Type of study / research

Systematic review

## Geography of the study

International (including Europe)

## Funding of study

### Federal source

No

### State source

No

### Nonprofit Grant Funding Entity Source

No

### Nonprofit Grant Funding Entity Source

No

### Academic Institution Source

No

### Pharmaceutical Industry Source

No

### Tobacco/E-Cigarette Industry Source

No

## Declaration of interest

**The submitter declares that during the past 5 years have a direct nor indirect link (professional\*, personal or financial\*\*) with the tobacco and e-cigarette companies**

No