

# Experimental trial on the effectiveness of IQOS compared to e-cigarettes and regular tobacco cigarettes

Effects on acute craving, withdrawal, positive and negative experiences

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**vs.**



**vs.**



# Declaration of interest

- I have received no funding, nor have competing financial interests
- I have no ties with the e-cigarette industry, nor with the tobacco industry, nor with pharma companies
- My PhD research focuses on Tobacco Harm Reduction (THR) in general and e-cigarette based THR in particular

# Introduction



- Proportion of **current smokers** in the EU remains stable since 2014: 26% (European Commission, 2017)

- **E-cigarettes** can be used as a THR tool

*“Although it is not possible to precisely quantify the long-term health risks associated with e-cigarettes, the available data suggest that they are unlikely to exceed 5% of those associated with smoked tobacco products, and may well be substantially lower than this figure”*

(Royal College of Physicians, 2016, p. 87)



# Introduction

- In the EU, **prevalence of e-cigarette users** remains stable over the last years (European Commission, 2017):
  - 15% at least tried e-cigarettes
    - 2% are current vapers

⇒ **uptake** remains relatively low

# Introduction

- **Not all** smokers **benefit** from the use of e-cigarettes (McKeganey & Dickson, 2017):
  - Among confirmed smokers, 59% has ever tried e-cigarettes
  - Elements least liked about e-cigarettes were:
    - Vaping experience
    - Technology
    - “Chemical nature” of liquids
    - Complex technology

# Introduction



- Recently, the tobacco industry developed alternative Reduced-Risk Products  $\Rightarrow$  **Tobacco Heating System (THS)** (PMI, 2017)
  - Heating instead of combustion
  - Aerosol contains substantially reduced levels of toxicants
  - Similar results regarding behavioral experiences compared to regular cigarettes
- However, little independent research, especially regarding behavioral experiences of THS use!

# Methods – Research questions

- What is the effect of using **IQOS** on ...
  - exhaled carbon monoxide (eCO)
  - acute craving
  - withdrawal symptoms
  - subjective positive and negative experiencesafter smoking abstinence in regular smokers compared to using an **e-cigarette** or their **regular tobacco cigarette**?
- Which **product** (e-cigarette or IQOS) will be **preferred** by first-time users?

# Methods – Participants

INCLUSION CRITERIA	EXCLUSION CRITERIA
<ul style="list-style-type: none"><li>- Established, regular smoker for at least 3 years</li><li>- Smoking 8 cigarettes per day or more</li><li>- No intention to quit smoking within the following month</li><li>- Willing / accepting to try out several less unhealthy alternatives</li></ul>	<ul style="list-style-type: none"><li>- Current use of any kind of smoking cessation therapy</li><li>- Being a vaper now or in the past 6 months</li><li>- Being a THS user now or in the past 6 months</li><li>- Several medical conditions (e.g., diabetes, asthma, ...)</li></ul>



Intake

Day 1

Day 2

Day 3



Questionnaire:

- Demographics
- Smoking history
- FTCD

eCO measurement

0 min

5 min

10 min

20 min

35 min

55 min

*12 hours smoking abstinence*

VAS cigarette + eCO + QSU + MNWS

*5 min smoking / vaping / using IQOS*

VAS cigarette + eCO + QSU + MNWS + mCEQ

VAS cigarette + eCO

VAS cigarette + eCO

VAS cigarette + eCO

VAS cigarette + eCO + QSU + MNWS

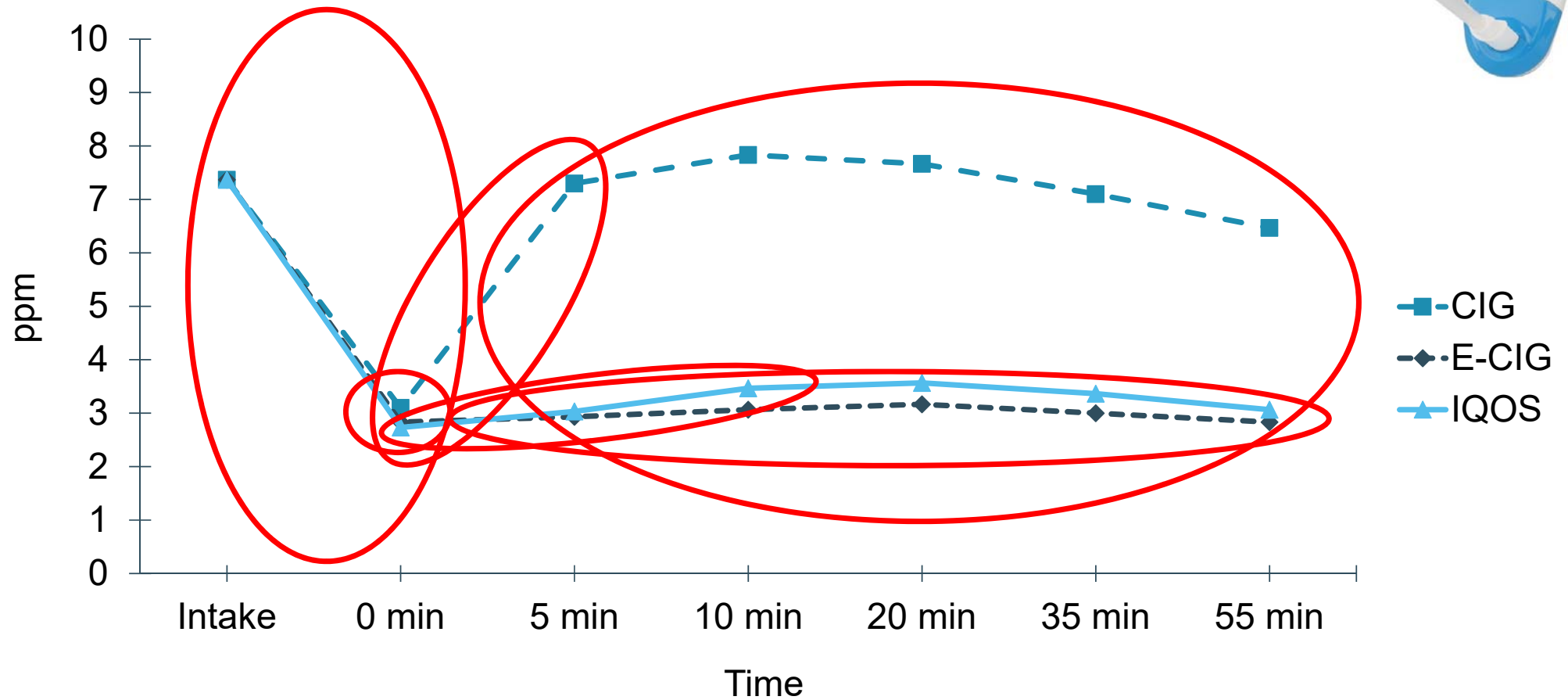
Add. Day 3: VAS product preference

N = 30

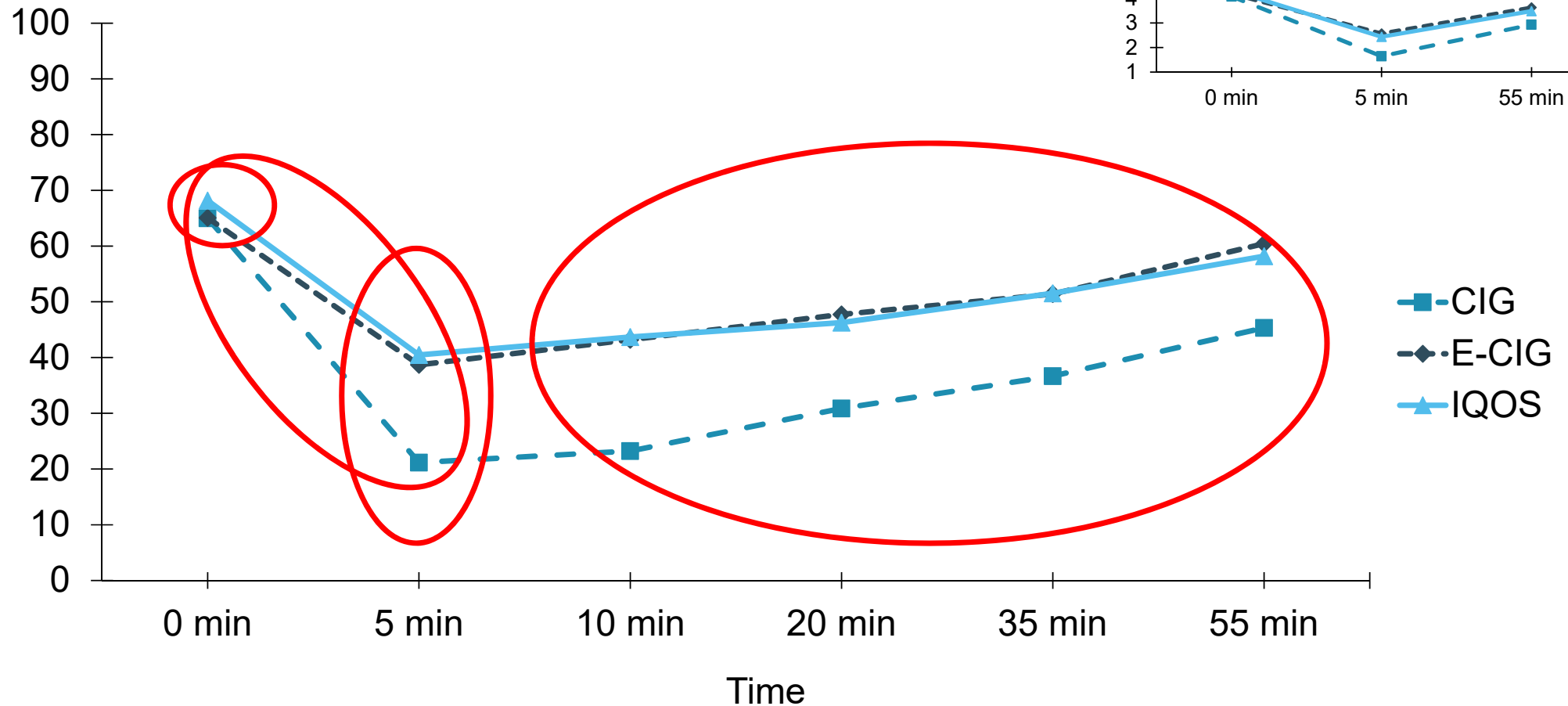
# Results

- **Participants** ( $n = 30$ ) were:
  - On average 22 years old
  - Mostly male (67%)
  - Almost all students (93%)
  
- Smoking on average 4 years
- Smoking currently on average 13 cigarettes per day (CPD)
- Low to moderate cigarette dependent ( $M_{FTCD} = 3.50$ )

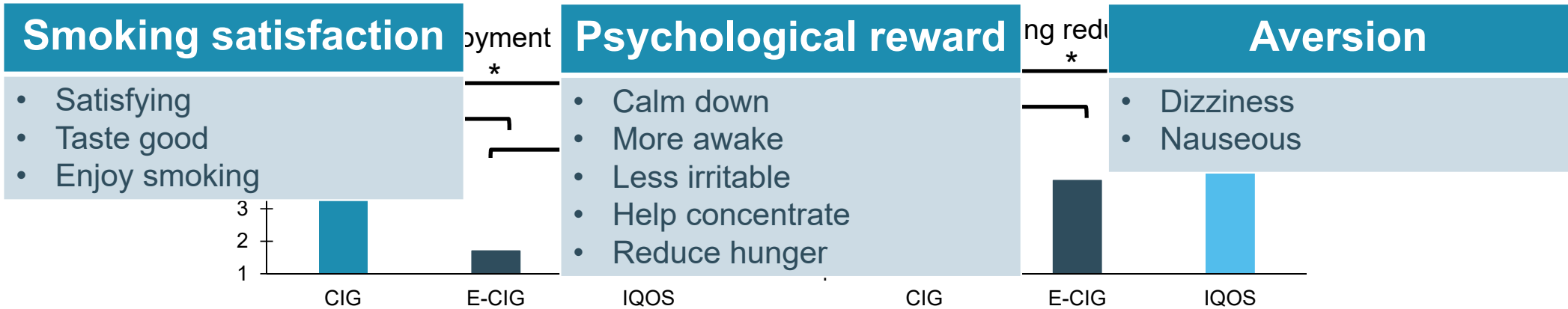
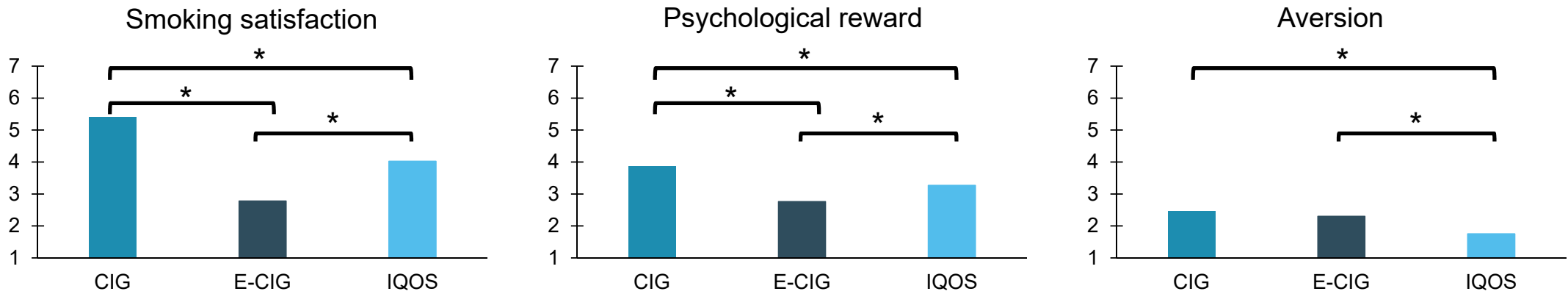
# Results – eCO levels



# Results – acute cigarette craving

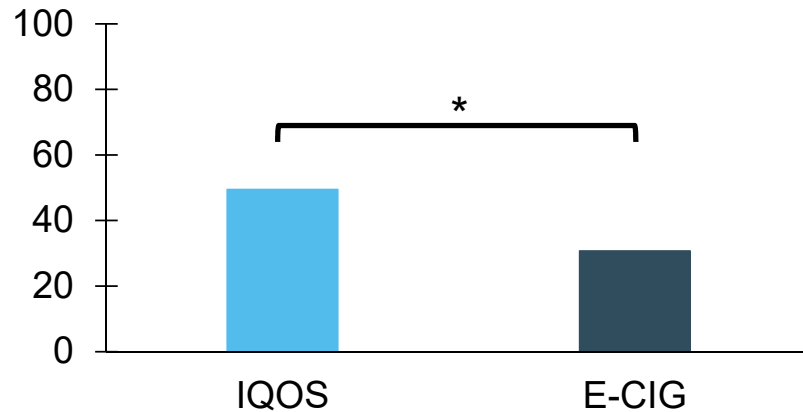


# Results – product evaluation

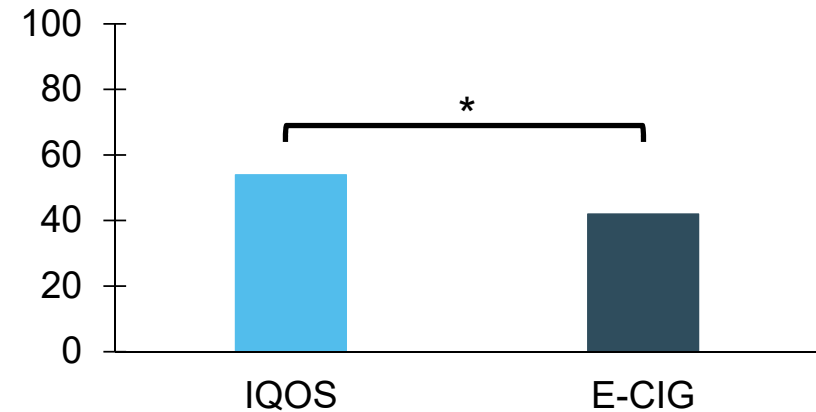


# Results – product preference

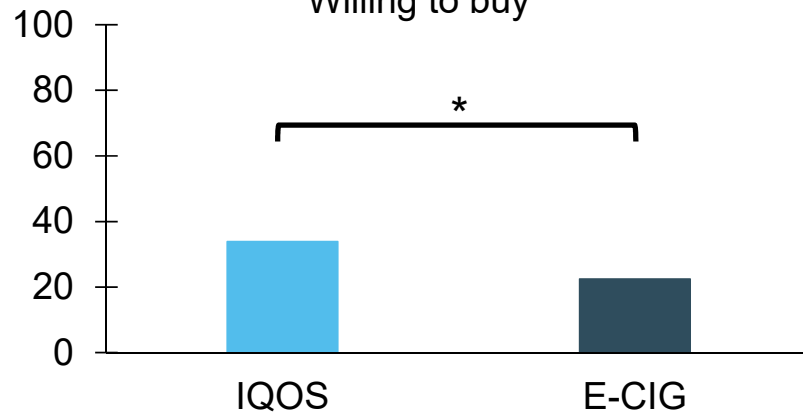
Trying out another 5 minutes



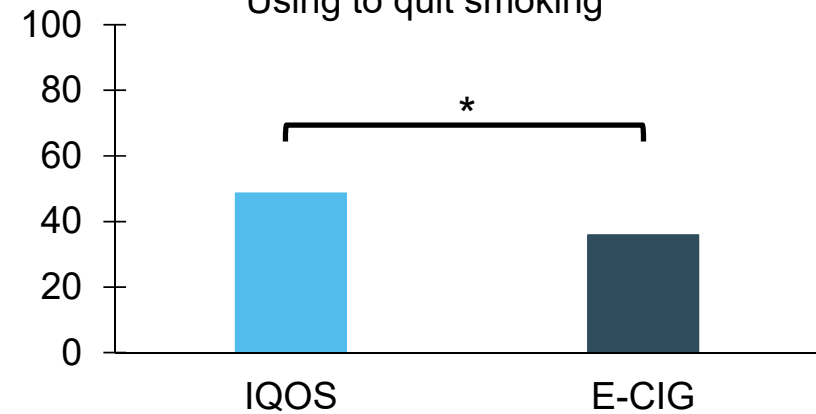
Wanting to experiment



Willing to buy



Using to quit smoking



# Conclusion

- **In first-time users:**
  - No increase in eCO level when vaping
  - Significant increase in eCO level when smoking and using IQOS, however, increase when using IQOS is minor, and comparable with previous research (PMI, 2017)
  - Clear craving reduction for using IQOS, vaping and smoking, most pronounced for smoking
  - Cigarette showed the best product evaluation, followed by IQOS and e-cigarette
  - Relative low product preference for both IQOS and e-cigarette

# Conclusion

- Results need to be seen in light of sample/products used
    - ⇒ First-time users
    - ⇒ One type of e-cigarette/liquid
  - Main results in line with previous research
    - ⇒ Although similarities between using IQOS and smoking not that pronounced
- ⇒ Long-term studies are needed to investigate the behavioral and psychological effects of long-term IQOS use compared to smoking and vaping



# Thank you for your attention!



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